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ADDRESSES AND ORIGINAL ARTICLES

MEDICAL JOURNALISM IN THE BRITISH EMPIRE *

By N. G. Horner, M.D. Camb.
EDITOR OF THE "BRITISH MEDICAL JOURNAL"

Medical journalism is the smallest of the specialties. Whole-time medical editors and assistant editors throughout the British Empire can be counted on two hands with perhaps a finger to spare. Add to these the medical men who combine the conduct of important journals with the practice of medicine, and the number of "professionals" is still trifling. But small as the world of the medical press may be, those who live their lives in it believe that this by-path of medicine is by no means the narrowest of specialties; in fact, they are the most general of all general practitioners. It is their business to hold up a convex mirror, reflecting "the medical scene" in little, as it shifts from week to week and from month to month.

For a useful retrospect, however brief, I must go back further than the hundred years of the Association's life. The earliest English medical journal was *Medicina Curiosa*. The first number appeared on June 17th, 1684; the second, and last, on Oct. 23rd of the same year. It consisted chiefly of translations or abstracts of articles published in French or Latin. In form and substance it was an imitation of an annual compiled by the Academy of Vienna and first published at Leipzig in 1670. During the eighteenth century there were small medical societies in London and other centres and some of them published a volume of essays and reports annually, or at irregular intervals. A number of English medical publications arose at various dates from 1757 onwards, but nothing of the nature of a medical journal was published till towards the end of that century. The *London Medical Journal* began in 1781 and continued for about ten years, and the *Medico-Chirurgical Review* ran from 1795 until 1807. The first medical journal to be firmly established in this country was the *London Medical and Physical Journal*, which professed to give its readers the "earliest information on subjects of medicine, surgery, pharmacy, chemistry, and natural history, and a critical analysis of all new books in those departments of literature." It ran from 1799 until 1833. The *British and Foreign Medico-Chirurgical Review*, founded in 1816, had a long and useful career, but it was more a review of current literature than what we now understand as medical journals; the pioneer of these was *The Lancet*, started by Thomas Wakley in October, 1823.

Thus long before *The Lancet* there were monthly and quarterly medical periodicals, but however weighty their scientific articles might have been their influence was small, and thenceforward the weekly journals became the only ones that counted in the world of medical politics. Macaulay said of the *London Gazette* in 1685 that "Whatever was communicated respecting matters of the highest moment was communicated in the most meagre and formal style," and this applied to the medical journals of England before 1823. A weekly medical paper was a startling innovation; its unrestrained attacks upon important personages and medical institutions, and its fierce advocacy of reform, attracted wide notice. Thomas Wakley was a warm-blooded man, who furiously resented the abuses and the injustice then rife in our profession. Controversy was the breath of his nostrils, and the personalities he hurled at opponents in the early volumes of *The Lancet* seem incredible to polite ears of to-day. Opprobrious nicknames and other scurrilities were spattered through the editorial articles. Members of hospital staffs and rival medical journalists all came under Wakley's lash. After a few years his paper outgrew the tantrums of childhood and settled down into its respectable and beneficent course. Then in 1839 the *Medical Times* jumped into the arena, with abuse of Wakley as its chief trick, but, learning manners also in adolescence, it survived as a reputable paper until 1851. For 16 years *The Lancet* alone voiced the feelings and wishes of the majority of the profession, and for another 10 years only one paper attempted to dispute its possession of the field. After the rise to importance of the British Medical Association, however, it was inevitable that its official organ should represent the interest of its members, and assume part of the duties formerly undertaken by *The Lancet*. But the two journals have worked side by side for the common good, and disregarding bygone personal feuds, we may say that there has never been other than friendly rivalry between them. In 1844 the page of *The Lancet* was enlarged, and in the choice and arrangement of material it became almost the standard pattern for weekly medical journals throughout the British Empire, Germany, and to some extent America. The Wakley dynasty ended in 1909, but the tradition built up through the Victorian era was safe in the hands of Sir Squire Sprigge, whose happy blend of wisdom and wit has served *The Lancet* and the profession for nearly 40 years.

From the time when it began to get into its stride the progress of the British Medical Association depended in large measure on the growing success of its weekly organ, without which the scattered members could not have been kept together and many reforms must have failed. The forerunner of the *British Medical Journal* was started in 1840 as the *Provincial Medical Journal* by two members of the Provincial Medical and Surgical Association, under which name our Association was founded by Charles Hastings in 1832. It soon changed to the *Provincial Medical and Surgical Journal*; then from 1853 to 1856 it ran as the *Association Medical Journal*. When the Association made a final choice of name the Journal quickly followed suit and from the first volume of 1857 it has been the *British Medical Journal*. For the high position attained by its weekly organ among the professional periodicals of the world the B.M.A. had to thank two great medical journalists—Ernest Hart, editor (with a gap of 15 months) from 1866 to 1898, and Sir Dawson Williams, editor from 1898 to 1928. No men could have been less alike in appearance or character. Hart, with unbelievable energy, adroitness, and resource, and a scintillating mind unfettered by scruples, forced himself and his journal upon the world of medicine. The task of consolidation fell to Dawson Williams, and many here to-day must almost feel, as I do, his presence among us; the stern glance with its flashes of kindly humour, the massive intellect and unbending purpose, the wisely cautious approach to every question, the sense of values, the thoroughness, and the honesty that shone through every act of his life.

* Read at the History of Medicine Section of the Centenary Meeting of the British Medical Association on July 29th.

Fielding Garrison groups the better sort of medical periodicals into three classes: those devoted to purely scientific and experimental researches; those devoted to the specialties; and the general medical periodicals. In 1836 seven medical periodicals were published in these islands—three quarterly, one fortnightly, and three weekly. In our centenary year the number is 100. Six of them appear weekly, 3 fortnightly, 38 monthly, 10 two-monthly, 31 quarterly, 3 thrice a year, 6 once a year, and the rest at irregular intervals. More than half these journals (55) are devoted to specialties, and 13 are students' gazettes. I do not include dental and veterinary publications, or journals of pure science, or periodicals intended mainly for laymen, or the "house organs" circulated to doctors by manufacturers of drugs and foods; otherwise the total would be much larger.

The Librarian of the B.M.A., Mr. Shields, has given me a list of periodicals published to-day in the Dominions and other parts of the British Empire overseas. By the same process of exclusion applied to home journals I make the total 27, distributed thus: India, Burma, and Ceylon, 10; Canada 6; Africa 5; Australasia 4; Malaya 2. The oldest are the *Canada Lancet and Practitioner* (founded in 1863) and the *Indian Medical Gazette* (1866). The earliest of the forerunners of the *Canadian Medical Association Journal* dates from 1872, and in like manner the *Medical Journal of Australia* can be traced back to 1856, and the *South African Medical Journal* to 1884. Nearly all the others belong to this century, and the youngest is barely two months old. The long history of medical journalism in Australia has been told by Dr. J. H. L. Cumpston, Director-General of Health for the Commonwealth. As at home, so in the Empire overseas, medical periodicals have come and gone; some lived many years, others a few months; some changed their name with a change of ownership, or became merged in the body of a former rival. By a pleasant coincidence the *Irish Journal of Medical Science* has just completed a hundred years of continuous publication, under different names, and in its centenary number Dr. T. P. C. Kirkpatrick tells the story of the Dublin medical journals.

Not until the end of the first half of the hundred years had the subdivision of our craft gone so far as to provoke an eminent physician to launch a diatribe against specialism in medicine. He called it a morbid condition of the mind, and said roundly that this thing must be stopped. But it went on, and the partition of medicine into more and more plots of intensive cultivation led to the founding of special journals, one after another, here and abroad. This proliferation of specialist journals may have gone too far in some respects, but on the whole I think the good outweighs the harm. It has advanced knowledge, and it relieves the general medical periodicals of the hopeless task of trying to keep their readers acquainted with the minutiæ of technical procedures that are outside the ordinary doctor's ken.

It is beyond my power to make a forecast: I must leave prophecy to those who are not so near the middle of the machine. During the lifetime of our Association the medical press of this country and of the Dominions has built up a world-wide reputation. But there is room for improvement. The spirit of the age calls for a lighter touch, a crisper presentation of what is salient in fact and theory, without sacrifice of solidity. Our public—or the part of it that matters—consists of educated men and women, keen on their work and jealous of the good name of their profession. They want the greatest measure of sound information and guidance, but they do not ask us to vulgarise our pages in pursuit of a spurious brightness. Combative medical journalism served its purpose 100 years ago. There have been half-hearted attempts to revive it in my time; but levity does not pay in the grown-up medical world of to-day, and the tightening of the law of libel has made scurrility a dangerous weapon to its user. On the whole, we may expect that the weekly journals will continue to forward medical science and practice, and that in the consolidation of professional interests they have good work still to do.

LUNG COLLAPSE THERAPY*

By H. Morriston Davies, M.D., M.Chir. Camb., F.R.C.S. Eng.

MEDICAL SUPERINTENDENT, VALE OF CLWYD SANATORIUM

The most important principle in the treatment of pulmonary tuberculosis is rest. Rest that is regulated as is possible only in a sanatorium; rest that takes into consideration the activity of the disease, the degree of toxæmia, and the psychology of the patient.

The second principle is that known as "fresh air," a term with the widest significance referring to the air breathed, which should, theoretically, be pure, dry, and moderately invigorating; and referring equally to the air which comes in contact—and incidentally should be allowed to come freely in contact—with the skin. This air should also be dry, and preferably cool and in constant gentle motion.

The third principle is exercise: exercise regulated with the greatest care and alternating with rest. But exercise does not come into the picture until the activity is controlled and the absorption of toxins ceases to be a disturbing factor.

With these principles it is possible to go far in the arrest of pulmonary tuberculosis, and it would be possible to go much further if the cases were recognised and treated in the early stages. Collapse therapy, with the exception of phrenicectomy, does not come into consideration for these early cases, nor for those somewhat more advanced for which there is a reasonable prospect that the tuberculous disease can be arrested and prevented by ordinary precautions from recurring (but a persisting cavity, even if dry, does not come into this category).

There are, however, many cases that will not respond to these first principles of treatment, either because the resistance is too low or the disease too acute, or because there are complications such as hæmorrhage too serious to permit of delay. There are other cases in which the disease has relapsed or, when first seen, has progressed so far that changes of a mechanical nature such as cavitation, shrinkage of fibrous tissue, and dilatation of the bronchial tubes have developed. There are other patients, again, for whom the time-factor necessitated by unaided sanatorium treatment is not available, or whose home conditions are such that after-care is impossible and who must therefore be made reasonably safe before being allowed out again into the world. These need the additional aid of collapse therapy, always bearing in mind that this must be regarded, not as an alternative but as an accessory to sanatorium treatment, the continuation of which is of the utmost importance.

* Read before the Tuberculosis Society of Scotland on April 29th.

Collapse therapy can be defined as the treatment of the lung or lung and parietes whereby the volume of the lung is diminished, cavities are obliterated, and abnormal dilatations of the bronchi and bronchioles are reduced. A further purpose is served by the collapse in that the lung is brought into a state of comparative rest and there is at the same time a condition of lymph and blood stasis.

There are five ways of obtaining lung collapse—apart from certain subsidiary methods such as division of the scaleni and first rib and neurectomy, with which I am not dealing because I wish to concentrate on the more important ones. Each of these methods attains its object of reducing the volume of the lung either by what may be called "passive collapse" or by "active compression." These are two different principles which, owing to possible complications, have an important bearing on the after-results. Another factor of great importance, because of its influence on complications, is that in some of the methods the collapse is dependent on the introduction of a foreign substance, but in others the collapse is effected by alterations of one or more of the surrounding walls.

It can be stated as a general principle that the reduction of the lung volume should always be obtained by collapse methods, if possible, as opposed to methods which exercise compression. Collapse in itself is a harmless procedure, but compression at once brings into prominence new factors which may have an unfavourable influence. Chief among these are a tension strain on diseased areas, such as adhesions and cavities, and also displacement of normal structures, causing interference with function. A second general principle is that the introduction of foreign substances, especially as a permanent measure, should, if possible, be avoided, as they tend to produce irritation of the tissues with which they come in contact; nor do the tissues necessarily acquire a tolerance with the passage of time.

Pneumothorax and Oleothorax

The first method for collapse therapy is artificial pneumothorax, in which air, a comparatively innocuous foreign body, is introduced into the pleural cavity. This method achieves its object primarily by collapse, but in some cases there is an added measure of compression. In a case free from adhesions the compression force should never be used, but when there are adhesions some degree of compression is often tried in the endeavour to increase the lung collapse. With the introduction of the compression force artificial pneumothorax becomes changed at once from a procedure capable of immense benefits and comparatively free from risks to one in which the benefits are modified and which is fraught with possible complications, the benefits decreasing and the risks increasing with the extent of the adhesions. When adhesions are present and interfere with effective collapse of the lung, the alternative possibilities of treatment are to divide the adhesions by diathermy and cauterisation, to paralyse the dome of the diaphragm when the adhesions are basal or, unless contraindicated by the condition of the opposite lung, to substitute the artificial pneumothorax by a thoracoplasty.

The second method for controlling the lung is the use of paraffin-gomenol or olive oil-gomenol in the production of oleothorax. The former of these is used only to replace an artificial pneumothorax, the latter for the replacement and treatment of purulent effusions—a method which has proved of the utmost value. Paraffin-gomenol (and to a lesser extent olive oil-gomenol is a foreign body which, when introduced into the pleural cavity, is apt to produce reactions. So serious may these be that oil must never be injected into a virgin pleural cavity. The longer the membranes have been exposed to the air of a closed pneumothorax or to an effusion, and the greater the changes in the membranes, the less the liability to reaction. With care, the pleural membranes acquire a tolerance to oil in so far as can be judged by the absence of reactions.

Of paramount importance is the fact that in an oleothorax the lung is influenced more by compression than by collapse. In an oleo-pneumothorax, even if the air is at a slightly negative pressure, the pressure below the surface of the oil will be positive because of the weight of the oil. When the oil fills the available part of the pleural cavity there are two possible prejudicial factors: the foreign body and the compression force. This combination is doubtless responsible for the comparative frequency of perforation and pleuro-pulmonary fistula.

There are, in my opinion, two types of oleothorax; one is the safe variety with which the patient does extremely well; the other is the type liable to perforation and with which, even when perforation does not take place, the benefits are not so great. The difference is in the mediastinum. When there is a mobile mediastinum swinging oilwards on inspiration and being displaced to the healthy side on expiration there is little risk and the results are very good; but when the mediastinum is rigidly fixed and the lung is compressed, immovable, unable to vary its volume, and unable by respiratory movements to vary the circulation and the lymph flow, then the results are apt to be disappointing, and there is the ever-present danger of lung perforation.

The replacement of a pneumo- by an oleothorax is in rare cases justifiable when the attendance of the patient for refills of air is constantly required and there is difficulty in obtaining these refills, but then only if the mediastinum is mobile and the patient has already had a pneumothorax for at least six months. Such patients undoubtedly derive a much greater benefit from the more constant and steady collapse of the lung by oil. Oleothorax is admissible as a temporary method for checking the re-expansion of a lung which is becoming drawn out by an adhesive pleurisy, but a close watch must be kept on the intrapleural pressure. If the pressure of the surface oil is becoming strongly positive, if the mediastinum is fixed (as it surely will be in such a case), and if there is discomfort or pain, oil must be withdrawn and the intrapleural pressure considerably lessened. When the method is used as a means of increasing the compression on a lung insufficiently collapsed, the risks are likely to be in excess of the possible gains.

Despite the great care that must be exercised in using oil, olive oil-gomenol has proved of the greatest service in the treatment of purulent effusions which develop as a complication of artificial pneumothorax. Its value is not exclusively confined to tuberculous effusions; it may even check and control an effusion infected with pyogenic organisms, saving the patient from much more serious operative intervention.

Hemidiaphragmatic Paralysis

The third method of obtaining lung collapse is by phrenicectomy or phrenic evulsion producing hemidiaphragmatic paralysis. This operation stands in a class by itself because it is practically devoid of risks or of complications. The reason for this is that it is

a simple operation,† there is no introduction of foreign bodies into the thorax, and the effect of the paralysed dome is a pure, though limited, collapse. As with the other methods, there is an element of uncertainty as to the result; so much depends on the choice of case and on the existing pathological conditions. In a few cases there is no obvious change for the better, though none for the worse; in the majority there is unquestionably great benefit, whilst in some the result is strikingly satisfactory.

To obtain complete and permanent paralysis of one dome of the diaphragm it is necessary to make certain that the continuity not only of the phrenic nerve is destroyed but also that of any and all accessory nerve-fibres that may join up with the main phrenic. This junction occurs usually at the base of the neck or along the first 10 cm. of the intra-thoracic course. The most certain way of ensuring complete rupture of all the nerve-fibres is by evulsing the whole phrenic nerve, including its terminal branches. This is simple in some cases but in many it is difficult or unwise. The size, the toughness of the nerve, and the adhesions round it at some part or another of its course vary greatly. If the nerve is not equal to the traction and breaking, the distal part retracts into the thorax and cannot be recovered. When the nerve is tough but adherent, forceful traction will cause pain; it may also tear the pleura or the lung and result in a pneumo- or even a pyo-pneumothorax, or in infection or emphysema of the mediastinum. Another danger lies in the fact that while the main phrenic nerve enters the thorax behind the subclavian vein, the accessory phrenic frequently crosses over the vein and, joining the main nerve, forms a loop round the vein. Traction on the phrenic means in such cases traction on the loop and so on the vein. If the pull is continued the accessory phrenic is usually torn away from the nerve—but not always. These risks sound formidable; in practice the most serious ones are of extreme rarity, since the nerve breaks before it does the damage.

Phrenic evulsion, when the nerve comes out easily, is the operation of choice; in all other cases the operation should be a phrenicectomy. This means that 2 cm. or so should be resected from the phrenic nerve and from all accessory nerve bundles, including the nerve to the subclavius. These accessory fibres are found by exposing the brachial plexus, dissecting through the strong fascia which covers it and binds the various nerve bundles together, seeking out the nerve to the subclavius and any other fine nerve bundles coursing superficial to the main trunks of the plexus, and excising a length from these.

The immediate effect of paralysing the dome is that it loses its tone and, what is more important, the pathological tonic spasm so often seen in disease. Becoming flaccid, it no longer controls the upward trend of the intra-abdominal organs but rises into the thorax, partly pushed up from below by the intra-abdominal positive pressure and partly drawn up from above by the intrathoracic negative pressure. As the muscle-fibres atrophy, and in the ensuing weeks the diaphragm becomes converted into a sheet of fibrous tissue, the yield increases; it may be six months, a year, or even two years before the dome reaches its maximum height. The effect of the paralysis may, however, be greatly impaired by intrapleural adhesions and thickening of the pleural membranes. It is these pathological changes which, being difficult to gauge, tend to make the results of phrenicectomy uncertain.

The effect of hemidiaphragmatic paralysis on the lung, when the rise of the dome is unhampered by adhesions, is to produce a reduction of volume affecting the whole vertical diameter of the organ, exerting its influence on base and apex alike. But, in view of the fact that pathological tissue is always straining to shrink more strongly than the normal elastic tissue of the lung, the rise of the dome exercises a selective collapse on the fibrosed and diseased area. It is for this reason that one of the strong indications for phrenicectomy is chronic fibrotic lesions of the apex with cavitation. Fibrotic lesions generally, in contradistinction to exudative lesions, respond to this operation. It is almost a necessary corollary that the greater the rise of the dome, the greater the collapse and therefore the greater the benefit. With exudative lesions, on the other hand, even if of the base of the lung, the benefit is small or negligible, because the exudative area resists collapse and the reduction in lung volume is therefore taken up by the healthier parts rather than by the diseased areas.

Phrenicectomy has a decided value in the treatment of small chronic basal effusions, despite the thickening of the surrounding pleura. Comparatively little rise of the dome must be expected. It is rather in the relaxation of the tension of the muscle and in the slackening-off of the strain at the base of the lung and on the surrounding adhesions that the benefit lies.

Phrenicectomy is sometimes combined with artificial pneumothorax. It does unquestionably affect the rate of absorption of the gas, allowing a greater interval between the refills. On the other hand, it is extremely doubtful if it has any effect on the inhibition of the occurrence or recurrence of pleural effusions. When the pneumothorax collapses the upper but fails to collapse the lower lobe on account of adhesions to the diaphragm, hemidiaphragmatic paralysis may be of some assistance. In these cases, however, the intrapleural pressure on the side under treatment is usually about zero or even slightly positive, and tends therefore to counteract the upward push from the abdomen. Phrenicectomy is of most value at the conclusion of artificial pneumothorax, whether the conclusion is deliberate or involuntary, due to an adhesive pleurisy. The object of paralysing the dome is to obtain a big reduction in the volume of the hemithorax and thus reduce the drag on the fibrous tissue and the resultant tendency to the reopening of cavities.

The value of phrenicectomy in the treatment of certain symptoms is strikingly great in properly selected cases. The irritating dry cough due to diaphragmatic adhesions can be immediately and completely abolished. Expectoration is made easier, and dyspnœa due to mechanical difficulties produced by long-standing fibrosis and contraction can be reduced. In left-sided cases vomiting may be checked, whilst tachycardia and irregularities of the pulse which are consequent on pleuro-pericardial adhesions can be greatly lessened.

There is a type of case in which collapse therapy is indicated and which is suitable for treatment by artificial pneumothorax but for which phrenicectomy is preferable. By this single, simple operation, free of aftermath in the form of complications, the needed collapse can be obtained and the tedium of incessant refills over a long period of time and the risk of effusions can be avoided. Such cases are essentially

† It is not a simple operation for those unpractised in the art of surgery.

those with a chronic, fibrous lesion, either localised or scattered, with comparatively few symptoms and without bronchitis, dilated tubes, or multiple cavitation. Phrenicectomy is more particularly indicated when the time-factor is a problem, when refills may be difficult or uncertain, and when the home conditions are unsatisfactory.

Thoracoplasty

The fourth method of obtaining lung collapse is thoracoplasty. By this operation the change in lung volume is due to collapse and no foreign body is introduced into the pleural cavity. From this it can be inferred that, once the operative risks are over, there is no fear of future complications arising from the treatment. The immediate risks of thoracoplasty are, however, considerably greater than from the three previous lines of treatment. The risks vary with the type of case, the general condition of the patient, the amount of sputum, and the number and extent of ribs resected. In rigidly selected cases the mortality should not be greater than 3 or 4 per cent., but with less favourable cases, and especially if the operation is on the right side, the mortality may be over 10 per cent. Table I., from Gravesen's figures, shows the comparison of the results of thoracoplasty with those of artificial pneumothorax. When comparing these figures it must be borne in mind that in the great majority of cases submitted to thoracoplasty, sanatorium and artificial pneumothorax treatment had previously been tried and had failed to arrest the disease. Had thoracoplasty not been done these cases would have come under the heading of the last group, with 11·8 per cent. only "cured" and a mortality of nearly 82 per cent.; this means that over 30 per cent. of cases have been saved by thoracoplasty.

TABLE I.—*Permanent Results of Pneumothorax and of Thoracoplasty* ‡

State of the patients after a period of observation from 2 to 12 years

—	Total.	Cured.	Unimproved.	Dead.
		No. and percentage.		
Cases of thoracoplasty.. ..	155	65 (42·0)	8 (5·2)	78 (50·3)
Cases of practicable pneumothorax	143	55 (38·5)	5 (3·5)	83 (58·0)
Complete pneumothorax— Without adhesions ..	47	33 (70·2)	2 (4·2)	12 (25·5)
With localised adhesions..	42	14 (33·3)	—	28 (66·6)
Partial pneumothorax with large adhesions	45	5 (11·1)	—	40 (88·9)
Impracticable pneumothorax with generalised adhesions	77	9 (11·8)	3 (3·9)	63 (81·8)

Jessen's figures (Table II.) are also of great interest, as they show not only the mortality in relation to favourable and unfavourable cases, but also the greater risk of the operation on the right as compared to the left lung, due to the effect on the right heart, which is responsible for the pulmonary circulation.

The indications for thoracoplasty, stated briefly, are those cases of pulmonary tuberculosis, and particularly the chronic type with cavitation, which resist healing by other simpler measures. Early cavities, even when comparatively large, with but little surrounding fibrous tissue, can heal without collapse therapy, but when the cavitation is chronic and the surrounding and adjacent lung is fibrosed, collapse therapy is usually needed to produce obliteration. A cavity which is dry but not obliterated is not healed.

TABLE II.—*Mortality of Thoracoplasty on the Two Sides of the Chest* §

—	Favourable.	Less favourable.	Unfavourable.	Total. of cases.
	Per cent.			
Right side ..	0·0	13·3	66·0	13·8
Left side ..	0·0	0·0	42·8	6·8

The most important contra-indication is the presence of any active disease in the opposite lung. The one exception is when there is hæmorrhage which threatens the patient's life, but even in these cases the contralateral disease must be at most localised and non-progressive.

The operation of thoracoplasty is not so standardised as it was a few years ago. The rib resection is done through a paravertebral incision and always extends as far back as the transverse processes of the vertebræ. The number of ribs resected, the amount of each rib removed, and the number of stages in which the operation is done are variable factors, depending on the extent and character of the disease, the general condition of the patient, and the amount of sputum. The thoracoplasty may consist of the resections of any number of ribs from the first four to the first eleven, but the first rib, the keystone of the chest, must always be divided. Chronic disease localised to the apex or upper lobe, with fibrosis and a large cavity, should always be dealt with by a localised thoracoplasty unless complete collapse can be obtained by artificial pneumothorax. The success of the operation depends on a very extensive resection of the upper ribs, which necessitates certain modifications in the technique.

There is considerable difference of opinion as to the advantage or disadvantage of a preliminary phrenicectomy. As a test of the ability of the opposite lung to stand the major operation, it is probably valueless. Its efficacy in preventing the so-called inhalation pneumonia is doubtful, especially as this complication is more often contralateral. My present attitude is that it is a desirable preliminary to the localised upper lobe thoracoplasty because it assists in the collapse of this part of the lung. I am, however, opposed to it in conjunction with a total thoracoplasty.

One of the results of lung collapse is a venous and lymph stasis in that lung. If the collapse is permanent and made complete and invariable by the fixed chest, raised dome, and rigid mediastinum, there is very little or no fluctuation in the degree of circulatory stagnation. This I consider unsatisfactory. My results, when this is the case, have been less completely satisfactory than when there is some fluctuation, such as certainly occurs in a partial thoracoplasty and to a lesser extent in a total thoracoplasty with the diaphragm unparalysed. Support for this view is available also in the cases of oleothorax with a

‡ Gravesen, J.: Contribution to discussion on Thoracoplasty. Seventh Conference of the International Union against Tuberculosis, Oslo, 1930.

§ Jessen, H: Behandlungserfolge der extrapleuralen Thorakoplastik, Forts. Ther., 1931, vii., 72.

fixed mediastinum, which have proved less satisfactory than cases of complete collapse by oil in which the mediastinum shows a definite respiratory pendulum swing.

Extra-pleural Pneumolysis

The fifth method of collapse therapy is extra-pleural pneumolysis whereby the lung and both layers of the pleura are separated away from the chest wall and the collapse so obtained is maintained by extrapleural tamponage with a foreign body consisting of paraffin or of fat or muscle. Some excellent results are recorded, and I have had success particularly with living tampons of breast and muscle, yet the method is subject to complications, such as extrapleural effusions, disintegration of the living tissues introduced, and perforation into lung cavities. Pneumolysis is occasionally of value in producing closure of a cavity not effectively obliterated by thoracoplasty. As a method of collapsing apical lesions it is not, in my opinion, comparable to an efficient apical thoracoplasty. Pneumolysis may, however, be indicated in such cases when, on account either of the age of the patient or of the presence of some active disease in the contralateral lung, thoracoplasty is not justified.

EPENDYMAL CYST OF THE THIRD VENTRICLE

ASSOCIATED WITH DIABETES MELLITUS

BY F. B. BYROM, M.D., M.R.C.P. LOND., AND DOROTHY S. RUSSELL, M.D. LOND. *

(From the Medical Wards and Bernhard Baron Institute of Pathology, the London Hospital)

THE following case is recorded for two reasons: First, because the association of progressive diabetes mellitus with a tumour in close anatomical relation with the vegetative nervous centres of the hypothalamus is of considerable theoretical interest. Secondly, because the case provides an illustration of a dilemma not infrequently encountered in emergency practice—namely, the problem of deciding, when confronted with a case of coma attended by glycosuria, whether these symptoms are caused by true diabetes or by an acute cerebral condition.

Report of Case

A married woman, aged 49, was first admitted to the London Hospital under the care of Dr. O. Leyton, on Sept. 13th, 1929. She was readmitted on Nov. 23rd, 1929, and died five hours later (Reg. Nos. 41310 and 41645, 1929).

Family history.—Her father had died of diabetes and dropsy, her sister of diabetic gangrene, and an aunt had also died of diabetes. Her mother had died of Bright's disease. Her husband and two brothers were alive and well. She had had no children.

History of illness.—In 1909, 20 years before admission to the London Hospital, the patient began to suffer from intense hunger, especially on waking in the morning, and extreme lassitude. After two years, during which she became steadily worse, she was given a course of dietetic treatment in a nursing home. Her symptoms were relieved, but recurred whenever she neglected her diet.

In 1924, five years before admission to the London Hospital, she again became very weak and was two stone below her normal weight. She began to complain of vague headaches, and on one occasion she had an attack of extreme drowsiness, without actual loss of consciousness, which lasted for several days. Some weeks later she was admitted to St. Thomas's Hospital under the care of Dr. A. E. Russell, who has kindly allowed us to quote from the clinical records. Sugar and acetone were found in the urine on admission. On a restricted carbohydrate diet the glycosuria ceased, and the blood-sugar on discharge was 0·167 per cent.

In the course of the following five years her hunger became worse, and she suffered from polyuria, although receiving insulin. In 1926 her ovaries, Fallopian tubes, and vermiform appendix were removed.

In 1929 she became subject to attacks of severe headache and tinnitus, which lasted about ten minutes, and recurred several times a day. The pain began in the occipital region, and radiated to the forehead and down the spine as far as the shoulder-blades. In February, 1929, she was readmitted to St. Thomas's Hospital. The urine again contained sugar and acetone. She was treated by dietetic restriction and insulin. The blood-sugar fluctuated between 0·14 and 0·35 per cent. Two bright spots of exudate were seen on the right retina close to the macula. After leaving hospital the amount of insulin was gradually increased to 30 units twice daily, but this did not control the glycosuria. Two weeks before her first admission to the London Hospital she began to suffer once more from great thirst, and at this time would drink five or six glasses of water in succession without any relief. She complained also of shortness of breath and pains in the joints of the upper limbs.

First admission to the London Hospital (Sept. 13th, 1929).—She was emotionally very unstable, weeping on the slightest provocation, and liable to fits of profound depression. There was a moderate degree of wasting. The temperature was subnormal. The pulse-rate was increased, varying from 80 to 95 beats per minute, and there was slight enlargement of the thyroid. There was no pigmentation of the skin. The optic discs appeared normal, and no abnormal signs were observed in the central nervous system, heart, lungs, or abdomen. The urine was loaded with sugar and acetone bodies, and the blood-sugar was 0·4 per cent. The urinary output varied between 32 oz. and 84 oz. per day, with an average of 61 oz.

Her diet was limited to 30 calories per kg. of standard body-weight (carbohydrate 61, protein 65, and fat 130 grammes), and insulin was given in increasing doses until she was receiving 40 units thrice daily. On discharge on Oct. 7th, 1929, the urine was free from sugar, and the following blood-sugar readings were recorded at varying intervals throughout the day: 0·10 per cent., 0·22 per cent., 0·13 per cent., 0·17 per cent., 0·13 per cent., 0·14 per cent. She had gained 6 lb. during her stay in hospital.

Second admission (Nov. 23rd, 1929).—She had remained free from glycosuria and had felt well until Nov. 19th, 1929, when she complained of severe headache and drowsiness. Twelve hours before admission she complained of feeling very unwell, and within four hours before admission she became unconscious. She was brought up to hospital in profound coma. Breathing ceased a few minutes after admission, but as the heart continued to beat strongly artificial respiration was begun. The blood-sugar on admission was 0·32 per cent. She was immediately given 100 units of insulin intravenously,

* Working under grants from the Medical Research Council.

together with 60 c.cm. of a 10 per cent. solution of glucose.

She was first seen by one of us (F. B. B.) about one hour after admission, in deep coma, and apparently moribund. Her skin was cold and cyanosed, the tongue dirty, but quite moist. The radial pulse was readily palpable, beating with surprisingly good volume at 120 per minute. There was no indication of dehydration of the subcutaneous tissues, and intra-ocular tension was not palpably lowered. The pupils were widely dilated, and there was slight blurring of the nasal side of both optic discs. The limbs were flaccid, and no tendon or plantar reflexes could be elicited. A specimen of urine obtained by catheter was loaded with sugar and gave strongly positive Rothera and ferric chloride reactions.

Frontal section of brain showing cyst suspended from fornix.

The lack of dehydration and the presence of respiratory failure contra-indicated a diabetic origin of the coma, and the possibility that this was due to an acute intracranial lesion, such as a ruptured congenital aneurysm of a cerebral artery, was entertained. In view, however, of the previous history of undoubted diabetes, together with the presence of considerable ketosis, it was decided to treat the patient vigorously with insulin. The blood-sugar at this time was 0·99 per cent. Accordingly a second injection of 100 units of insulin was given intravenously. One hour later the general condition was unchanged, and the blood-sugar was 0·50 per cent. About one litre of normal saline was injected intravenously together with a further dose of 200 units of insulin. At the end of a further hour no clinical improvement could be detected, and the blood-sugar remained at 0·50 per cent. Lumbar puncture was then performed as a diagnostic measure, and between 10 and 20 c.cm. of cerebro-spinal fluid were allowed to escape before the needle was withdrawn. It was under somewhat increased tension, and contained a slight excess of protein, but no blood.

About an hour later the pulse weakened and became imperceptible. Cardiac puncture was performed, and 1 c.cm. of 1 in 1000 adrenaline solution was injected into the right ventricle. Feeble pulsations continued for a time, but the heart finally ceased beating after nearly five hours of artificial respiration. Blood obtained by cardiac puncture immediately after death contained 0·5 per cent. of sugar and 0·03 per cent. of urea.

SUMMARY OF NECROPSY

Ependymal cyst of roof of third ventricle. Tuberculous tracheitis, aortitis, and enterocolitis. Caseous tuberculosis of right suprarenal body. Fibrocaseous and granulomatous tuberculosis of upper lobe of left lung. (P.M. 419, 1929.)

No macroscopic abnormality in pancreas (neck, body, and tail 21×3×1·5 cm., head 8×6×3 cm.). Slight fatty degeneration of second convoluted tubules and congestion of kidneys. Considerable ischæmic nephritis. Congestion and focal fatty infiltration of liver. Congestion of spleen; no lipoid-containing cells in pulp of spleen. Mucous catarrh of stomach. Hypertrophy of muscle of pyloric canal (0·8 cm. thick; 5 cm. circumference) and less of pyloric antrum (0·25 cm. thick). No macroscopic ulceration nor fibrosis in stomach or duodenum. Granulomatous tuberculosis without ulceration of lower foot of ileum, ileocæcal valve, and first 23 cm. of ascending colon. Chronic hypertrophic inflammation of lymphatic glands of mesentery along ileocæcal and right colic vessels, especially in their lower parts. Fibrous peritoneal adhesions between coils of lower ileum, rectum, and bladder. Appendix, Fallopian tubes, and ovaries absent. Old operation scars in right lower abdomen, and in mid-line between umbilicus and pubis. Fibro-granulomatous tuberculosis of arch of aorta without dilatation of lumen, but causing conspicuous, greyish-white fibrous thickening (up to 0·8 cm. thick) of adventitia. Fibro-granulomatous tuberculosis of trachea and left bronchus from third ring to hilum of lung. Collapse of lower and posterior part of right lung. Slight reticular fibrosis and anthracosis in apex of upper lobe of right lung; anthracotic nodule (0·6 cm. diam.) of fibrocaseous and granulomatous tuberculosis in apex of upper lobe of left lung with an adjacent fibrous pleural tag. No macroscopic abnormality in bronchial lymphatic glands. Considerable general atheroma. Colloidal hypertrophy and slight cellular hyperplasia of thyroid gland. Caseous tuberculosis and atrophy of right suprarenal body. Hypertrophy of left suprarenal body. Middle ears clean. A well-nourished, grey-haired woman.

Interval between death and necropsy, 7 hours.

Weights.—Body, 48·7 kg. (length, 1·58 m.); heart, 234 g.; liver, 1517 g.; kidneys, 291 g.; spleen, 248 g.; brain, 1198 g.; suprarenal bodies, 14·7 g.; pancreas, 88·8 g.; thymus, 4·9 g.; thyroid gland, 15·9 g.; pituitary body, 0·9 g.

Brain.—On reflecting the dura the surface of the cerebral hemispheres appeared very dry, and there was considerable flattening of the convolutions. A nodular plate of bone (2·2 × 1 × 0·5 cm. thick) and a plaque of yellow adipose tissue (0·3 cm. diam.) were present in the anterior end of the falx. The left lateral sinus joined the superior longitudinal sinus in an abnormal position, 3·5 cm. above the torcula, only a few small branches occupying the normal course to the torcula. There was slight cupping of the superior surface of the diaphragma sellæ and pituitary body. There was no cerebellar pressure cone. The left cerebral hemisphere appeared slightly larger than the right; the left occipital pole extended a little further backwards, and was definitely more obtuse than the right. There was considerable internal hydrocephalus involving both lateral ventricles, especially the posterior and descending horns on the left side and the third ventricle. The

aqueduct of Sylvius and the fourth ventricle appeared normal.

From the anterior pillars and body of the fornix there was suspended a globular cyst (2 cm. diam.) with a thin, well defined wall, and opaque, grey, semi-gelatinous, diffluent contents which did not solidify on fixation in saline formaldehyde (see Figure). This cyst lay behind the foramina of Monro, and projected from the lower surface of the fornix into the third and left lateral ventricles. The tela choroidea was attached to the inferior surface of the cyst, the choroid plexus of the left lateral ventricle was applied to its left wall at a point about midway between the dorsal and ventral poles, while the choroid plexus of the right lateral ventricle lay against the right wall at a point about three-quarters of the distance between the dorsal and ventral poles. The size, position, and mobility of the cyst suggested that it had acted during life as a ball-valve to the foramina of Monro.

On section, the walls of the cyst collapsed and a large part of the contents escaped, exposing the lining which was smooth, glistening, and grey.

MICROSCOPICAL APPEARANCES

(*a*) *Cerebral cyst.*—After fixation in 4 per cent. saline formaldehyde, half of the cyst was embedded in paraffin. Sections were stained with hæmatoxylin and eosin, Weigert's iron hæmatoxylin and van Gieson's mixture, Weigert's fuchselin and neutral red, and Mallory's phosphotungstic-acid hæmatoxylin.

The wall of the cyst is composed of stout, concentrically arranged collagen fibres. Between these fibres lie a few spindle fibrocytes and capillaries. In the neighbourhood of the choroid plexuses an occasional arteriole is seen in oblique section amongst the outer layers of the collagen. There is considerable infiltration of the wall in many places with small and large lymphocytes and a few neutrophil leucocytes. There is no neuroglia in the wall.

The cyst is lined with a single layer of epithelial cells which are of low cubical form in some places and in others are considerably more flattened. These cells have an eosinophil granular cytoplasm which is frequently occupied by large vacuoles of angular form. The nucleus usually lies in the centre or towards the base of the cell; it is oval, with the long axis parallel to the base. It has a delicate nuclear membrane and a very close net of delicate chromatin strands studded with a few large nodes. In many instances a nucleolus can be demonstrated by staining with pyronin methyl-green.

The free border of this epithelium is often occupied by tufts of cilia. With Mallory's phosphotungstic-acid hæmatoxylin these cilia are very clearly demonstrated and terminate proximally in blepharoplasten, which are seen as a row of minute purple dots near the free margin of the cell.

Evidence of degeneration of the epithelial lining is seen in frequent pyknosis of the nuclei. The cyst contents are composed of amorphous masses of eosinophil debris containing degenerating epithelial cells and a few neutrophil leucocytes.

Outside the collagenous wall on the dorsal surface of the cyst and extending down its sides to the level of the choroid plexuses is a cap of fibrillar glia containing relatively few nuclei, which is evidently derived from the fornix. This cap includes a zone of dense gliosis where it abuts on the dorsal pole of the cyst; here the glial fibrils are closely packed and moulded to the form of the underlying cyst wall, from which, however, they are quite distinct. A few corpora amylacea lie amongst the glial fibrils near the wall of the cyst.

The choroid plexuses of the left lateral ventricles and of the third ventricle are united by a little areolar tissue to the cyst wall; the plexus of the right lateral ventricle lies completely separate at a little distance in the sections, although on naked-eye examination it appeared to be attached to the cyst. There is no pathological change in the plexuses. Throughout a short distance immediately below the plexus of the left lateral ventricle and immediately above the plexus of the third ventricle, the outer surface of the left wall of the cyst is coated with a low cubical epithelium, without blepharoplasten and cilia, that is indistinguishable from the choroidal epithelium. With this exception the ventral surface of the wall of the cyst terminates externally in the collagen of which it is composed.

(*b*) *Pancreas.*—Portions of the head, body, and tail were fixed in 4 per cent. saline formaldehyde and embedded in paraffin. Sections were stained by the methods enumerated above with the omission of Mallory's stain.

There is post-mortem degeneration in a few linear and wedge-shaped areas in the borders of the tissues. In these areas there is shrinkage of the acini and partial or complete necrosis of their cells. In many places the acinar cells are dissociated. The stroma separating the acini is swollen and hæmatoxyphil, and the cells in it have undergone necrosis. These areas of digestion are almost confined to the head; in the body the change is very inconspicuous and it is absent from the tail. Throughout the pancreas the lobules and their component acini appear to be of normal size. There is no fibrosis nor inflammatory infiltration. The epithelium lining the ducts is frequently desquamated into the lumina, but apart from this the ducts are unaltered. The islets do not appear to be reduced in number, but on comparing the sections with controls they seem on an average to be abnormally small. There is no dropsical nor hyaline degeneration in the islets, and in many instances the cytoplasm of the cells is occupied by numerous fine eosinophil granules.

INTERPRETATION OF FINDINGS AT NECROPSY

The cystic tumour found in the roof of the third ventricle is lined with a typical ependymal epithelium. It is, therefore, an ependymal and not a choroid plexus cyst. The epithelium is surrounded by a wall of collagen on all sides. The cyst cannot, therefore, be interpreted as a diverticulum of any part of the third or lateral ventricles. Its anatomical continuity with the tela choroidea and the choroid plexuses suggests that the collagen of its wall is derived from these structures.

The naked-eye appearances of the cerebral hemispheres indicated a considerable rise of intracranial pressure. This was unquestionably due to the presence of the cyst, and was most probably produced by blockage of the foramina of Monro. Alternatively, it might have been produced by a ball-valve action of the cyst towards the aqueduct of Sylvius, a view that is supported by the pendulous nature of the cyst and the dilatation of the third ventricle.

The pancreas was of normal size, and, on microscopical examination, displays no inflammatory or other lesions that would point to a coincidental diabetes, independent in origin from the cerebral condition. No particular importance is attached to the observation of the slight diminution in size of the islets. The amount of variation observed is probably within the range of normal. Little value can be attached to these negative findings, because it is well known that in many cases of diabetes mellitus the pancreas shows no specific changes.

The right suprarenal body was greatly atrophied as the result of destruction by fibrocaseous tuberculosis. The left suprarenal body had undergone a compensatory hypertrophy, and appears normal in histological examination. Unfortunately they were not weighed separately, but the collective weight of the two (14·7 g.) is within the normal range. There was therefore no anatomical evidence of either excess or deficit of suprarenal tissue. The rare finding of tuberculous aortitis, in common with the other manifestations of tuberculous infection in this case, must be regarded as coincidental phenomena.

Discussion

Cysts of the third ventricle are uncommon, and of those reported a minority only is of the same kind as in the present case. In some of the published cases the cyst is clearly the result of degeneration in a glioma, while others are of an epidermoid or parasitic nature. Of 20 cases in the literature that cannot be so dismissed a few only are adequately described histologically. Many are labelled as "colloid cysts" of undetermined origin. Full descriptions are, however, given by Sjövall,[13] Beutler,[5] and Wahlgren [15] of cysts

that are histologically identical with the example here described. In addition to these the case referred to by Klarfeld [12] is evidently of a similar kind, because he states that the cyst was lined with a ciliated epithelium. Other cysts of an allied type appear to be derived from the choroid plexus; such cysts are described by Sundberg,[14] who mentions that cilia were not present in his specimen, by Drennan,[9] and by Fulton and Bailey.[10] The latter two authors give a comprehensive bibliography of the subject.

These ependymal cysts are not to be confused with the cystic dilatations of the cavum septi pellucidi recently described by Dandy.[8]

The histological character of these cysts has, however, no direct bearing upon the clinical manifestations that result from their presence. The symptoms that arise are due, as would be expected, to mechanical disturbances. These are of two kinds: first, obstruction to the circulation of the cerebro-spinal fluid; and secondly, pressure effects upon the adjacent brain tissue. Evidence of both types of disturbance is found in the present case. The previous history of paroxysmal headache is suggestive of intermittent hydrocephalus, while, in the terminal stage, the absence of dehydration, the failure to respond to insulin, and the presence of respiratory paralysis indicate that the coma was due to acute hydrocephalus and not to diabetic ketosis. This view is confirmed by the appearances of the brain at necropsy.

The most interesting aspect of the case, however, lies in the association of the cyst with the clinical picture of diabetes mellitus. For reasons which will be outlined, it would be unwise to regard this association as simple coincidence. The influence of the central nervous system on carbohydrate metabolism has been recognised ever since Bernard [4] showed that puncture of the floor of the fourth ventricle caused transient glycosuria. Piqûre glycosuria is due to a discharge of sympathetic stimuli down the splanchnic nerves which raises the blood-sugar by mobilising the carbohydrate reserves to the liver, either directly, as Bernard himself suggested, or indirectly by increasing the secretion of adrenaline. The subsequent researches of Aschner,[2] Houssay and Molinelli,[11] Camus, Gournay, and Le Grand [7] and others have indicated that the sympathetic centres responsible for piqûre glycosuria lie, not in the fourth ventricle, but in the hypothalamic nuclei in the floor and walls of the third ventricle. Direct confirmation has more recently been provided by Beattie, Brow, and Long,[3] who have demonstrated a tract of efferent fibres uniting the posterior nucleus of the hypothalamus with the lateral horn of the grey matter of the spinal cord.

Clinical illustrations of the effect of stimulation of this sympathetic mechanism are provided by the symptomless glycosuria commonly observed during violent emotion, after anæsthetics, and in patients suffering from hyperthyroidism. A tumour of the third ventricle, therefore, might well cause simple glycosuria by involvement of this mechanism. Van Bogaert [6] indeed has described two cases of tumour in this region associated with hyperglycæmia. Sympathetic glycosuria, however, does not adequately explain the profound derangement of carbohydrate metabolism observed in the present case. The question therefore arises whether a benign glycosuria accompanying prolonged overactivity of the sympathetic mechanism may eventually acquire the more serious characteristics of diabetes mellitus. A consideration of the disturbances of carbohydrate metabolism commonly associated with hyperthyroidism suggests that this transformation may, in certain circumstances, take place. In exophthalmic goitre, a condition in which there is abundant evidence of excessive sympathetic activity, transient glycosuria is extremely common. In a much smaller proportion of cases this benign glycosuria gives way to a condition exactly resembling diabetes mellitus. Moreover, in such cases it is often found that several blood relatives of the patient suffer from diabetes *without* hyperthyroidism. In the presence of an inherited susceptibility to diabetes, therefore, a sympathetic glycosuria tends to become a permanent diabetes mellitus.†

Applying this analogy to the present case it is accordingly suggested that mechanical irritation of the hypothalamus by the cystic tumour in the third ventricle caused a chronic sympathetic hyperglycæmia which, in the presence of an hereditary predisposition to diabetes mellitus, eventually merged into the latter condition.‡ Several circumstances support this speculation. In the first place the constant tachycardia, the slight enlargement of the thyroid, and the emotional instability of the patient are consistent with sympathetic overactivity. Secondly, when the patient first attended St. Thomas's Hospital she had had symptoms suggestive of glycosuria for some fifteen years, and had had no more vigorous treatment than perfunctory restriction of diet. When pancreatic diabetes starts at the relatively early age of 30 it does not usually run such a benign course and it seems possible that during these earlier years the glycosuria was due to uncomplicated sympathetic hyperglycæmia. Finally, the very strong family history of diabetes suggests that the patient may have been peculiarly prone to this disease. It must be insisted, at any rate, that this fact cannot be cited as evidence that the diabetes arose independently of the cerebral condition, for this same apparent coincidence is commonly observed in both exophthalmic and acromegalic diabetes.

PRACTICAL CONSIDERATIONS

The case is of some practical interest. It occasionally happens that a patient admitted to hospital as suffering from diabetic coma fails to respond to treatment, and is found, on post-mortem examination, to have suffered from a cerebral lesion such as tumour or hæmorrhage. In such a case, just as in diabetes mellitus, the patient may be in coma and the blood-sugar may be extremely high. As a rule, however, it should be possible to establish the correct diagnosis during life. In true diabetes the gross ketosis which is responsible for the coma is attended by an extreme depletion of the extra- and intracellular fluid reservoirs of the body. The tongue is dry and shrivelled, the skin is lax, the pulse is thready, and the intra-ocular tension is lowered. In the case of a cerebral lesion none of these signs of gross dehydration is present, and although there may be ketonuria (a circumstance for which starvation is presumably responsible) it is of relatively small degree.

It is of vital importance to establish the direct diagnosis at the outset, for the treatment is diametrically opposite in the two conditions. In diabetic coma it is imperative to correct the dehydration by

† If diabetes mellitus be defined as a condition of permanent pancreatic exhaustion resulting from overwork, as Allen's [1] experiments suggest, the explanation of this transformation is simple, for the chronic sympathetic overactivity of Graves's disease must demand a compensatory effort on the part of the pancreas. However, it is by no means certain that diabetes can be so narrowly defined, and it would seem wise to reserve judgment on this point.

‡ Dr. C. N. H. Long, of Montreal (personal communication), mentions a case of apparent diabetic coma which failed to respond to large doses of insulin. A tumour of the third ventricle was predicted, and was discovered at autopsy.

the prompt use of intravenous or subcutaneous saline injections. In cerebral lesions, on the contrary, it may be desirable to lower the intracranial tensions by promoting dehydration. Injection of hypertonic saline may accomplish this end, but the use of normal saline is clearly contra-indicated. Viewing the present case retrospectively, there seems little doubt that it would have been wiser to have disregarded entirely the history of diabetes and to have pursued the latter line of treatment.

When confronted with a case of apparent diabetic coma, therefore, it is important to consider the possibility that both the coma and the glycosuria have been caused by a gross cerebral lesion, and to view in their correct perspective such positive data as a high blood-sugar, glycosuria, ketosis, and a previous history of "diabetes." In forming an opinion, the presence or absence of gross dehydration should be regarded as evidence of the greatest diagnostic significance.

Summary

A case in which a cyst of the third ventricle was associated clinically with diabetes mellitus has been described. It cannot be unequivocally proved that this association was not a coincidence. Yet considered in the light of the connexions known to exist between the hypothalamic nuclei and the sympathetic nervous system, it is suggested that chronic irritation of the grey matter of this region may have caused a sympathetic hyperglycæmia of sufficient degree and duration to initiate progressive diabetes mellitus in a patient congenitally predisposed to the disease.

The authors are indebted to Dr. O. Leyton for permission to publish the case, and to Mr. Hugh Cairns for his interest and advice.

REFERENCES

1. Allen, F. M.: Studies Concerning Glycosuria and Diabetes. Harvard University Press, Cambridge, Mass., 1913.
2. Aschner, B.: Berlin klin. Woch., 1916, liii., 773.
3. Beattie, J., Brow, G. R., and Long, C. N. H.: Proc. Roy. Soc. B., 1930, cvi., 253.
4. Bernard, C.: Leçons sur le diabète, Paris, 1877, p. 370.
5. Beutler, A.: Virchows Archiv, 1921, ccxxxii., 358.
6. Van Bogaert, L.: Arch. Neurol. and Psychiat., 1928, xix., 376.
7. Camus, J., Gournay, J. J., and Le Grand, A.: Paris Méd., 1923, ii., 267.
8. Dandy, W. E.: Arch. Neurol. and Psychiat., 1931, xxv., 44.
9. Drennan, A. M.: Brit. Med. Jour., 1929, ii., 47.
10. Fulton, J. F., and Bailey, P.: Jour. Nerv. and Ment. Dis., 1929, lxix., 1.
11. Houssay, B. A., and Molinelli, P.: Compt. rend. Soc. de biol., 1925, xciii., 1454.
12. Klarfeld: Berl. klin. Woch., 1920, ii., 668.
13. Sjövall, E.: Zieglers Beit., 1910, xlvii., 248.
14. Sundberg, C.: Acta Med. Scand., 1923, lix., 423.
15. Wahlgren, F.: Acta Path. et Microbiol. Scand., 1924, i., 276.

HOSPITAL FOR SICK CHILDREN.—At the end of August Mr. James McKay will retire from the secretaryship of the Hospital for Sick Children, Great Ormond-street, London. Mr. McKay, who has been associated with the institution for 37 years, was responsible with Mr. Stephen Neil for the initiation of the Hospital Officers' Association; he also founded the *Hospital Gazette*, which has developed into the *Hospital* of to-day. Mr. H. F. Rutherford, of the Metropolitan Hospital, will be his successor.

ST. CHAD'S HOSPITAL, BIRMINGHAM.—The report for the 12 months ending March 31st of this hospital for private patients reports that it has suffered from the financial crisis, and that in the second half of the year the number of patients was only 60 per cent. of the normal. There was consequently a deficiency of £1262. Changes in the constitution and working of the institution have recently been made which permit of medical practitioners treating their own patients with all the advantages of a fully equipped hospital, including the services of a resident medical officer. All patients now pay a uniform rate of £5 5s. per week, whether they occupy separate rooms or share a small ward.

OBSERVATIONS ON THE CONSTITUTION OF THE ŒSTRUS-PRODUCING HORMONE

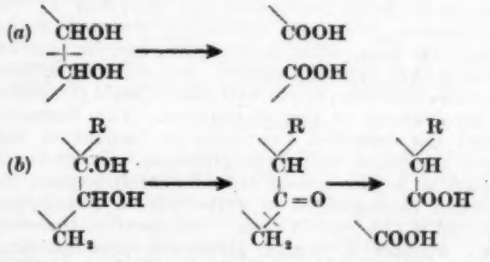
BY G. F. MARRIAN, D.Sc. LOND., F.I.C.
AND
G. A. D. HASLEWOOD, B.Sc. LOND.
(*From the Department of Physiology and Biochemistry, University College, London*)

RECENT work carried out by N. K. Adam and S. F. Danielli,[1] working in collaboration with us, has provided considerable evidence on the structure of the two crystalline œstrus-producing substances present in the urine of pregnant women. These two substances are represented by the formulæ $C_{18}H_{22}O_2$ (ketohydroxyœstrin) and $C_{18}H_{24}O_3$ (trihydroxyœstrin). Both substances possess a phenolic hydroxyl group and at least one aromatic nucleus.

Adam and Danielli have examined monomolecular films of various derivatives of these two substances spread on water surfaces, and have concluded that the molecules possess a fused ring structure as in compounds like phenanthrene, anthracene, and chrysene. These conclusions are supported by crystallographic work carried out by Bernal[2] on crystals of the active substances supplied by us. Adam and Danielli have also shown that the ketonic group in ketohydroxyœstrin and the two non-acidic hydroxyl groups in trihydroxyœstrin must be situated at the opposite end of the molecule to the phenolic hydroxyl. This conclusion is directly opposed to the views recently expressed by Butenandt.[3]

In attempting to gain purely chemical evidence on the structure of these compounds, we have attempted to oxidise them in various ways in the hope of obtaining easily identifiable degradation products. Rather to our surprise, trihydroxyœstrin proved to be fairly stable to potash fusion and to alkaline permanganate oxidation. These facts provide additional evidence in favour of the view that the molecule has a stable fused ring structure.

After prolonged treatment of trihydroxyœstrin with potash at 300°, we obtained good yields of an acid which analysed to $C_{18}H_{22}O_4$. This acid was still phenolic, and by titration it was shown to contain two carboxyl groups. It was evidently formed either by direct splitting between the two non-acidic hydroxyl groups (*a*), or if, as Butenandt[3] supposes, one of these is tertiary, it would have to be supposed that water was eliminated to form a ketone, and that a splitting of the ring then occurred on the side of the ketone group away from the original tertiary hydroxyl (*b*).



This acid by methylation and distillation of the crude product yielded a methoxyanhydride, $(OCH_3)C_{18}H_{19}$ O, m.p. 172–174°. On acetyla-

tion with acetic anhydride, an acetylated anhydride, $(OCOCH_3)$ $C_{18}H_{18}$ O, mp. 186–190° was formed.

The formation of an anhydride rather than a cyclic ketone on distillation of the acetylated dibasic acid would suggest that the ring which was split to form the acid was a five-membered ring. In the case of the sterols and bile acids, anhydride formation from dibasic acids has been accepted by many workers as indicating the presence of five-membered rings. Rosenheim and King,[4] however, have recently thrown some doubts on the validity of this argument.

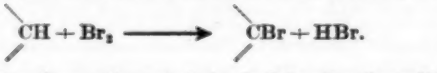
If it is accepted as a working hypothesis that the molecules are fused six-membered ring structures, we have the following possible formula types, assuming that each compound contains one aromatic ring:—

(*a*) If one double bond in addition to the three in the benzene ring is present, an anthracene or phenanthrene skeleton in which one ring is fully reduced, another ring partially reduced leaving one double linkage, the third aromatic, and aliphatic side chains adding to C_4H_2.

(*b*) If the molecule is saturated apart from the one benzene ring, a fused four-ring skeleton as in chrysene becomes probable.

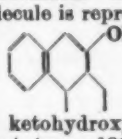
The evidence available bearing on the degree of saturation of the compounds is far from satisfactory. Thayer, Levin, and Doisy [5 6] determined the iodine values of the two compounds by a method which they do not describe. They obtained almost theoretical values for the addition of two halogen atoms to one double bond. In the case of ketohydroxyœstrin they claimed to have isolated a product containing the required two atoms of halogen.

We have ourselves made a careful study of the iodine values of the two compounds. With the two œstrins themselves, using the bromine reagent of Rosenmund and Kuhnhern, we obtained very high and extremely variable "iodine values," which we suggest are due to substitution of bromine in the aromatic ring. In order to minimise substitution we carried out determinations on the methyl ethers of the two compounds. We obtained surprisingly constant values which were almost theoretical for one double bond. An iodine value corresponding to that required for one double bond could, however, also be given if one atom of bromine was substituted, since in this case two atoms of bromine would react.



We therefore attempted to isolate the bromides from the reaction mixtures. Both ketohydroxy- and trihydroxyœstrin methyl ethers yielded crystalline bromides which on analysis were found to contain exactly one bromine atom per molecule. It was clear that no addition of bromine to a double bond had occurred, and that, therefore, the observed iodine values were due merely to the substitution of one halogen atom as we supposed. We are entirely unable to account for the discrepancy between these findings and those of Thayer, Levin, and Doisy.

At this stage in our work an important paper by Butenandt [3] was published. Butenandt could himself find little evidence in favour of the presence of a double bond which could react as an ordinary aliphatic double bond. He appears, however, to have to some extent accepted the statement of the American workers that a double bond is present, and on the basis of experimental evidence which we cannot regard as conclusive he postulates the presence of a somewhat non-reactive "enolic" double bond. His experimental evidence is briefly as follows: Ketohydroxyœstrin was converted into the semicarbazone and then reduced with sodium ethoxide under pressure at a high temperature. The product (desoxofollikelhormon) melted at 129–129·5° and analysed to $C_{18}H_{24}O$, and retained its phenolic properties as judged by alkali solubility. Clearly the compound was formed by the replacement of the =CO group by $=CH_2$. Ketohydroxyœstrin was then reduced by the Clemmensen method with zinc amalgam and concentrated hydrochloric acid and glacial acetic acid. A product, m.p. 129·5°, which was no longer soluble in alkali, was obtained. A mixed melting-point of the two compounds showed a 5° depression. Butenandt suggests that since the alkali solubility disappeared in the latter compound, reduction of a double bond upon which the acidic character of the hydroxyl group depended, must have occurred. He believes, therefore, that part of the molecule is represented by the following structure:



In our opinion, the experimental evidence put forward by Butenandt does not justify such conclusions.

We have ourselves prepared from ketohydroxyœstrin a Clemmensen reduction product (m.p. 130–132°), and we have obtained overwhelming evidence that the substance is phenolic. We have confirmed Butenandt's statements that the product is insoluble in alkali or, at any rate, has a low solubility, but we must point out that this is no criterion of the absence of phenolic properties. We have found, on the other hand, that on treatment with aqueous caustic soda, the substance, although not dissolving, forms a sodium salt. Many other high molecular weight phenols —e.g., hexadecyl phenol—are known to behave in a similar manner towards aqueous alkali.

The Clemmensen product gave a strong Millon reaction, and when treated in aqueous-alcoholic alkali solution with diazotised sulphanilic acid, formed a stable red dye. Furthermore, the analytical figures of our product fitted the formula $C_{18}H_{24}O$ very much better than the formula $C_{18}H_{26}O$ suggested by Butenandt.

Clearly, therefore, Butenandt was wrong in suggesting that a Clemmensen reduction caused the saturation of an enolic double bond as well as the reduction of the ketonic group.

If, as we suggest, the Clemmensen product has the formula $C_{18}H_{24}O$, we have to explain how it differs from the product of that formula obtained by Butenandt by the reduction of the semicarbazone. That they are different compounds is clear from the data published by Butenandt.

We tentatively suggest that the explanation lies in the occurrence of some isomeric change during the hot-acid treatment in the Clemmensen reduction. On treatment of ketohydroxyœstrin with a hot concentrated hydrochloric acid and glacial acetic acid mixture under similar conditions, as in a Clemmensen reduction, we have observed the rapid development of a strong pink colour with a green fluorescence. We observed similar, but less well-marked colour changes during the early stages of a Clemmensen reduction. Such colour changes suggested that some chemical change was occurring. From such acid-treated ketohydroxyœstrin we have separated crystalline products, which, although not pure, are certainly not unchanged œstrin. It is evident, therefore, that the Clemmensen reduction of ketohydroxyœstrin does not merely result in the reduction of the ketonic group, but is complicated by some preliminary isomeric change due to the treatment with hot acid.

The evidence we have outlined in this paper clearly

shows that there are no grounds for believing in the existence of any sort of double bond in the œstrin molecules, apart from those in the aromatic nucleus. A partially reduced phenanthrene or anthracene structure with aliphatic side chains is therefore impossible. Assuming as a working hypothesis that all the rings are six-membered, it becomes probable that the œstrin molecule is a partially reduced fused four-ring structure. We tentatively suggest that the molecule may be built up on a chrysene skeleton.

Rosenheim and King [4] have recently suggested that the sterols and bile acids, and consequently also pregnandiol (Butenandt [7]), are reduced chrysene derivatives. The acceptance of this theory opens up several interesting possibilities. It may now be possible to correlate the coexistence of œstrin and pregnandiol in human pregnancy urine with the disturbances in sterol metabolism which are known to occur in the human during pregnancy. Secondly, it seems possible that œstrin may turn out to be one of a whole group of pharmacologically active substances possessing large fused ring carbon skeletons, other members of the group being vitamin D and the carcinogenic hydrocarbons (Cook et al.[8]).

SUMMARY

1. Ketohydroxyœstrin and trihydroxyœstrin methyl ethers react with two atoms of bromine per molecule. The bromination products contain, however, only one atom of bromine. The œstrin molecules, therefore, do not contain a double bond capable of adding on bromine.

2. The product obtained by the Clemmensen reduction of ketohydroxyœstrin is a phenol of the formula $C_{18}H_{24}O$, and is not a neutral dihydro product of the formula $C_{18}H_{26}O$, as suggested by Butenandt. There is no evidence for the existence of an "enolic double bond" in the œstrin molecule as suggested by Butenandt.

3. It is considered probable that the œstrin molecule is a partially reduced fused four-ring system. A chrysene-like skeleton is considered possible. Since, however, a dibasic acid formed by the potash fusion of trihydroxyœstrin gives an anhydride when distilled with acetic anhydride, it is not improbable that one of the rings in the œstrin molecule is five-membered.

NOTE ADDED IN PROOF

Prof. Doisy has just informed us that he has also obtained the acid $C_{18}H_{22}O_5$ and that he has also found it to give an anhydride on distillation. Butenandt (*Nature*, in press) has now rejected the idea of the enolic double bond. He has obtained from œstrin by zinc dust distillation, an aromatic hydrocarbon which is not chrysene, but which he believes to be built up from three six-membered rings and one five-membered ring. On the basis of a recent Wieland-Windaus modification of the Rosenheim-King sterol formula, Butenandt suggests that œstrin is related to the sterols and pregnandiol.

The evidence appears to us now to be in favour of the presence of one five-membered ring in the œstrin molecule.

REFERENCES

1. Adam, N. K., Danielli, J. F., Haslewood, G. A. D., and Marrian, G. F.: Chem. and Ind., 1932, li., 259.
2. Bernal, J. D.: Ibid., p. 259.
3. Butenandt, A., Störmer, I., and Westphal, U.: Zeit. f. physiol. Chem., 1932, ccviii., 149.
4. Rosenheim, O., and King, H.: Chem. and Ind., 1932, li., 464.
5. Thayer, S. A., Levin, L., and Doisy, E. A.: Jour. Biol. Chem., 1931, xci., 655.
6. Same authors: Ibid., p. 791.
7. Butenandt, A.: Ber. Deut. chem. Gesell., 1931, lxiv., 2529.
8. Cook, J. W., Hieger, I., Kennaway, E. L., and Mayneord, W. V.: Nature, July 9th, 1932, p. 70. (Report of meeting of Roy. Soc., June 30th.)

DIATHERMY IN OBSTINATE CONSTIPATION

BY VIOLET M. H. RENDALL, M.R.C.S. ENG., D.M.R.E. CAMB.

DIATHERMY is hardly mentioned in English text-books in connexion with the treatment of constipation. In a debate on its influence in circulatory disturbances, introduced by Prof. Sidney Russ, in the Electro-Therapeutic Department of the Royal Society of Medicine, Dr. Justina Wilson has alluded to its value in chronic constipation, and this appears to be the first mention of the treatment in that connexion in England. Yet to many working in physio-therapeutics it must have occurred that the raising of deep temperatures and the production of local hyperæmias should be of practical value in certain of these cases.

In French and American literature, ranging from 1924 onwards, references can be found to the value of diathermy in chronic constipation—e.g., Archives des Maladies de l'Appareil Digestif et de la Nutrition, 1924; and "Physical Therapeutic Technic," Dr. F. Grainger, 1930. The contributions to the *Archives* were by Drs. Delherm and Laquerrière, electro-radiologists at the Hôpital de la Pitié, who stated that diathermy might be in these cases of great service. From German literature I may quote an article by R. Roosen [1] in which a direct recommendation is given of the employment of diathermy in constipation. (The reference was found and the translation made for me by the Librarian of the Royal Society of Medicine.)

"While the sedative, antispasmodic effect of diathermy is well known, and is used successfully in the treatment of spastic constipation, the knowledge of its effect in promoting peristalsis is not widely distributed. From clinical and experimental results it appears that the high-frequency electric currents used in diathermy generally stimulate the organs through which they pass. This effect is known and used therapeutically to stimulate the kidneys, salivary glands, mammary glands, and uterus. In the human stomach, Ludin found that diathermy raised the temperature inside the stomach, and produced increased peristalsis. Clinical results in the treatment of chronic atonic constipation by diathermy indicate a similar stimulation of peristalsis. After a week or two of daily abdominal diathermy, patients with typical atonic constipation are so often improved, not only while the treatment continues, but for a long time afterwards, that diathermy may be regarded as a reliable method of treatment for this condition, even in severe cases."

Diathermy, although its therapeutic range is large, has not been recognised in this country as particularly appropriate in dealing with constipation in any of its varieties; but several electro-therapeutists I know are using it in this way and are satisfied of its utility. With regard to the probable action of the high-frequency current on the colon, in a review of the uses of diathermy in medicine and surgery, Dr. E. P. Cumberbatch, opening a discussion at the Medical Society of London, in agreement with other authorities, attributed the beneficial effect solely to the heat produced, and it is still a disputed point as to whether the rapidly oscillating electro-magnetic waves have any further therapeutic effect. But even if diathermy is considered merely as a heat-producing agent, the atonic colon, sluggish, inactive, with poor musculature, should be benefited by increasing the circulation, bringing fresh blood through its walls, and removing congestion. Turning to spastic colitis—heat is the best means of relaxing any muscular spasm, and, while relaxing the abnormal

[1] Klin. Woch., 1928, vii., 1351.

contractions, normal peristalsis can be encouraged by means of improved blood-supply. In rectal dyschezia, where the normal impulse to defæcate is absent, rectal diathermy should prove a useful stimulus. I do not attempt to discuss the therapeutics in cases where the constipation is concurrent with some general disease, or to refer to the varied methods, with purgatives, that have their successes and failures. It is only intended to put forward one form of electrical treatment, diathermy, given in association with massage and colonic irrigation. Permanent relief is obtained by this procedure in large classes of obstinate cases, while the accompanying massage is an important part of the technique.

The favourable reports from foreign authors led me to try the results of a course of 16 diathermy treatments in a series of cases seen in a period of two years. A line of treatment practically common to all was adopted, and very little departed from; the electrical treatment remained the same, the variations being in diet, massage, and irrigation. The mode of life and the question of "habit" was investigated and a diet prescribed in accordance with the replies. The patient was examined to eliminate the possibility of the presence of some other disease, of which the constipation might be a symptom. Septic foci in the teeth, the tonsils, and nasal sinus were searched for. The degree of auto-intoxication (if any) as manifested by symptoms was estimated as closely as circumstances permitted, and a bacteriological examination of the fæces was made. It was endeavoured by clinical examination to grade the patient under the classic varieties of constipation, and where consent was obtained an X ray examination after a barium meal was made. As an approximate guide to the degree of stasis a cachet containing carmine dye was ordered to be taken at a certain hour, and the patient was instructed to note when the dye appeared in the motions.

Each patient had four diathermy treatments per week for four weeks. The treatment was administered by two large electrodes—one on the abdomen and one on the back. The amount of current given varied from 1500 milliampères to 2500 milliampères. This was continued for half an hour. The electrical treatment was preceded by 20 minutes abdominal massage, and each patient had two colonic irrigations per week, directed towards ascertaining the condition of the bowel contents and removing accumulated fæcal material.

CASE 1.—Obstinate constipation in a young woman. On Oct. 29th, 1930, her bowels were only moving once in four days, in spite of the fact that she was taking four vegetable laxative tabloids (B. W. and Co.) every night. An habitual tendency towards constipation had gradually become worse, she said, during the last three years in spite of many forms of treatment, and she had a feeling of distention and heaviness in the abdomen, which interfered with her profession as a dancer. She appeared strong and healthy, no septic foci were found, but the abdomen was distended and hard. No dye cachet was given, as the bowels so rarely acted. The report on a specimen of fæces was as follows:—

Films were seen to be composed chiefly of Gram-negative bacilli of coli type. There was also a fair number of streptococci and spore-bearing bacilli. No abnormal cells, amœbæ, cysts, parasites, or ova. Bulgarian bacilli were present in the proportion of 1 : 40 coli. Most of the bacteria in stained films showed poor definition and irregular staining, suggesting that they had already undergone early autolytic changes through delay.

Reaction: alkaline to litmus, pH 7·4.

Occult blood-test: negative.

The following organisms were isolated: *B. coli communis* and *Streptococcus fæcalis*.

Colonic irrigation.—First douche: A large quantity of hard lumps of fæces, black in colour, very offensive. Second douche: Fluid returned with a large quantity of loose fæces and offensive sediment.

Treatment was started consisting of abdominal massage and four diathermy treatments a week and, in this case, three colonic irrigations. After the first diathermy treatment the patient's bowels moved naturally, the first time for years. She started treatment on a Wednesday, and that night reduced the vegetable laxative tabloids from four to two. During Thursday the bowels were moved seven times. On Thursday night no drugs were taken, and there was a slight natural action on the Friday morning. During the following fortnight the routine was maintained, the patient having two actions a day, and taking one or one and a half vegetable laxative tabloids at night. The results of colonic irrigations showed consistent improvement, and the treatment with diathermy was continued for three weeks until Nov. 20th. On Jan. 30th, 1931, the patient reported that the improvement still continued. She had not had to increase the purgative at night and was experiencing a great relief, whilst the bacteriological report on her fæces was as follows:—

Films were seen to be composed chiefly of Gram-negative bacilli of coli type. There was also a fair number of streptococci and spore-bearing bacilli. Bulgarian bacilli were present in the proportion of 1 : 20 coli. Stained films showed considerable improvement, not only quantitatively as regards the Bulgar index, but also qualitatively as regards the character and staining reactions of the individual bacteria. These now stain sharply and evenly, suggesting that they are younger and have not been subjected to any undue delay.

Reaction: acid to litmus, pH 6·8.

The following organisms were isolated: *B. coli communis* and *Streptococcus fæcalis*.

On May 30th, 1931, the improvement was still maintained

CASE 2.—Man, aged 45, complaining of a burning pain in the epigastric region at varying intervals after food, first came to me on Nov. 17th, 1930. He had had attacks of this pain for about two years, and it was now practically continuous. He had suffered from habitual constipation, but did not take aperients. He led an athletic life and was

FIG. 1 FIG. 2

CASE 2.—Radiogram of colon 48 hours after a barium meal.
Before treatment. After treatment.

temperate in food and drink. Was thin and pallid, and suffered from headaches. Nothing suggesting a septic focus was discovered, and nothing abnormal could be felt in the abdomen, although he complained of slight tenderness over the epigastric region. A bacteriological examination of his fæces showed the following:—

Films were seen to be composed chiefly of Gram-negative bacilli of coli type. There was also a fair number of streptococci and spore-bearing bacilli. No abnormal cells, amœbæ, cysts, parasites, or ova were seen. The definition and staining reactions of most of the bacteria were poor, suggesting that they were partially autolysed through stasis. Bulgarian bacilli were present in the proportion of 1 : 45 coli.

Reaction: alkaline to litmus, pH 7·4.

The following organisms were isolated: *B. coli communis* and *Streptococcus fæcalis*.

An X ray examination, after a barium meal, showed an irritable rapidly emptying stomach; in one hour the stomach was practically empty, in four hours nearly all the meal was in the cæcum and ascending colon, and in 24 hours the ascending, tranverse, and upper portion of descending colon were filled. The meal then remained more or less stationary up to the point shown by a 56-hour picture. At 72 hours the colon was empty, but the appendix remained filled.

Colonic irrigation.—First douche: A copious, constipated result, green in colour, and *very* offensive. Second douche: Fluid returned with some loose fæces and sediment, still green in colour, slightly less offensive.

The patient was put on two diathermy treatments a week, and two colonic irrigations with abdominal massage, his business affairs preventing him from coming more often. It was impossible to put him on a constipation diet, owing to the condition of his stomach, so he was given a diet suitable for a gastric or duodenal ulcer, with alkalis every two hours. This, however, did not give as much relief as it should in a similar case, which seemed to indicate that most of the epigastric pain was reflex from his large intestine. After three treatments by diathermy the bowels were working better. The irrigation results gradually improved. As will be seen by the reports of the first irrigation, the patient used to accumulate a large collection of fæcal matter. This slowly diminished, and after five weeks the following was typical:—

First douche: A small action, some formed fæcal matter, with a little sediment. Second douche: Fluid returned with a little loose fæces, not offensive.

He was then given a second barium meal and an X ray photograph was taken at 48 hours. This picture shows the colon empty of the meal, a small portion only remaining in the rectum. If this is compared with the picture taken at 48 hours before treatment the improvement will be seen. (Figs. 1 and 2.) In the earlier picture taken on Nov. 12th, 1930, it will be seen that at 48 hours the entire colon is still filled with the meal. In fact, a result only obtained at 72 hours on Nov. 12th, 1930, was now obtained at 48 hours.

He had not had a headache since his first treatment, and his pain had practically disappeared. After the first three weeks' treatment he was gradually brought back to a normal diet, including plenty of fruit and salad. A bacteriological report two months after the beginning of treatment showed the following:—

Films were seen to be composed chiefly of Gram-negative bacilli of coli type. There was also a fair number of streptococci and spore-bearing bacilli. Bulgarian bacilli were present in the proportion of 1 : 2 2coli.

Reaction: faintly acid to litmus, pH 6·9.

The following organisms were isolated: *B. coli communis* and *Streptococcus fæcalis*.

This specimen showed considerable improvement as compared with the former one, the bacteria staining well and showing well-marked Gram differentiation.

At the end of the treatment, which lasted six weeks, the patient expressed himself as "feeling a different person." He had put on weight, had a better colour, and the abdominal tenderness was gone.

FIG. 3

CASE 5.—Before treatment (72 hours after meal).

FIG. 4

After treatment (48 hours after meal).

CASE 3.—Man, aged 27, first came to me on Dec. 16th, 1930, complaining of constipation of long standing. By taking a large dose of aperients daily he was able to get an action of his bowels about every third day, but on one occasion they did not act for a week. Apart from occasional headaches and lack of energy, he felt perfectly well, except when his bowels had failed to act for four or five days; then he sometimes became very distended and had attacks of sickness. The patient was well-built, with excellent teeth, the tonsils were healthy, the abdomen was not distended but very hard, but the tongue was furred and he had a muddy colour.

The patient would not consider an X ray or bacteriological examination, and it was useless to give a dye cachet as his bowels moved so infrequently.

Colonic irrigation.—First douche: A copious action, one mass of dark brown fæces, highly offensive. Second douche: Exactly the same as the first.

The following day another colonic irrigation was given with similar results. The patient stayed away five days, during which time he had no action of the bowels at all, in spite of purgatives, and was now put upon a regular course of treatment—three diathermy treatments, three colonic irrigations a week, abdominal massage, and diet. The diathermy was given in the usual manner, the patient taking up to 2000 milliampères on each occasion. Two vegetable laxatives were ordered every night. At first the improvement was slow and very irregular—sometimes the patient would have seven actions a day, and sometimes none at all. But after five weeks' treatment the patient was getting one or two actions regularly every day with the same aperient. His colour had improved, he had lost the headaches, and stated he felt mentally and physically better.

Colonic irrigation.—Results of colonic irrigation on Jan. 13th, 1931. First douche: A fair quantity of brown fæces, no hard lumps, not offensive. Second douche: Some more soft fæcal matter, and a considerable quantity of sediment.

CASE 4.—Woman, aged 60, came on Sept. 5th, 1930, complaining of constipation and flatulence with a general feeling of lassitude. She was taking strong purgatives with little or no result. She had a distended abdomen. All her teeth were false, the throat was in good condition, and there were no antra troubles nor other symptoms.

A bacteriological examination by Dr. Francis Brook showed 80 per cent. streptococci. The patient was given a carmine cachet to be taken at lunch time one day, and asked to notice when the dye passed. It took 42 hours to appear, in spite of taking two vegetable laxatives each night.

Colonic irrigation.—First douche: Dark brown fæces with a little loose offensive fæcal matter. Second douche: Discoloured fluid returned with a good deal of sediment, offensive.

On Sept. 22nd patient was given 30 minutes' diathermy treatment, which was continued twice a week for four weeks. She was also given two colonic irrigations per week with abdominal massage. Certain exercises and diet were enjoined. On Oct. 27th patient had been able to halve her aperient dose, her abdomen was much less distended, and she said that her flatulence was better and that she felt more energetic. The results of irrigation showed improvement, and also—an important point—she was able to expel the fluid in about 20 minutes, instead of in 40 to 45 as before. A bacteriological report on Nov. 12th showed: *Bacillus coli* (only) 100 per cent.; no streptococci present.

Another carmine cachet was given at the end of treatment and the dye appeared in 24 hours. She was seen again in February, 1931. She had not had to increase her aperients again, but stated she still occasionally suffered from attacks of flatulence and exhaustion. A second course of treatment would have been beneficial, but she said that she was quite satisfied with the result.

CASE 5.—A woman of 60, complaining of a general feeling of debility, attacks of headaches which she called "bilious attacks," and constipation, came to me in December, 1930. A year previously she had a thorough examination at the New Lodge Clinic, Windsor, for the above symptoms. A short synopsis of the findings there is as follows:—

"Test-meal, normal; chest and heart, normal; blood pressure, rather low; urine, normal; four septic teeth (since taken out); cholecystography showed normal gall-bladder; barium meal showed excessive peristalsis of the stomach; no signs of gastric or duodenal ulcer; abnormally strong contractions of the cæcum and transverse colon. The meal was in the colon at six hours, and at 48 hours little had reached the transverse colon and descending colon. Before treatment at 72 hours some of the meal was passed, but a considerable quantity still remained in the transverse colon, which showed strong spastic contractions." (Fig. 3.)

She said that after prolonged treatment she was given a diet, told to take senna pods every night, and sent home. During the year that elapsed before I saw her the constipation had, she said, become worse, and she had increased her aperients up to three tablespoonfuls of cascara evacuant daily. She was stout and flabby, with a muddy complexion and a distended abdomen with lax abdominal wall. No septic foci were found, nor any sign of organic disease. A carmine cachet was given, and 48 hours elapsed before the fæces passed were coloured.

The patient was put on four diathermy treatments a week and two colonic irrigations with massage, and a suitable diet and abdominal exercises were prescribed. After four weeks' treatment, during which time improvement was definite but gradual, the patient was able to reduce her aperients to a third of what she had been taking. Her colour was better, and her abdomen less distended. She had had no headaches or bilious attacks, and felt stronger and more active. A barium meal was given and the patient X rayed at 24 hours and 48 hours. (Fig. 4.)

It will be seen that the 48-hour X ray compared well with the 72-hour X ray taken at the New Lodge Clinic before the treatment. The patient had had an action at 24 hours and what was left of the meal was mainly in the rectum. This she passed about an hour after being photographed, the result of the diathermy apparently being to relax the spasm and allow the bowel contents to pass more rapidly.

The results of colonic irrigations showed marked improvement, as the following shows:—

Dec. 8th, 1930.—First douche: Large quantity of hard, small, round fæces, black in colour, offensive, clear fluid. Second douche: Similar to the first. Feb. 3rd, 1931.—First douche: Fluid returned discoloured, some soft formed fæces, brown in colour, not offensive. Second douche: Discoloured fluid with some sediment.

CASE 6.—Woman, aged 38, was sent to me by Dr. Geikie Cobb in November, 1930, for colonic irrigations. She was under treatment from him for spastic colitis. She had suffered from general debility and constipation since 1917. An X ray examination on Nov. 18th, 1930, showed an interesting condition of the left half of the transverse colon, and the descending colon. (Fig. 5.) Neither at 24 hours nor at 48 hours did this portion of the colon fill properly with the meal. She complained that she never had the slightest impulse to defæcate, nor did she feel any sensation in her colon whatever aperient she took. She had a sallow face and suffered from extreme lassitude. Her colonic irrigations presented difficulty in administration, as she found it impossible to return the fluid: she would take about an hour to return half the quantity of fluid given. The results on Nov. 26th, 1930, showed: First douche: A quantity of very offensive fæcal matter, reddish-brown in colour. A considerable amount of oil was also passed. (Patient was taking a paraffin preparation under Dr. Cobb.) Second douche: Similar to the first.

The patient came at first somewhat irregularly for treatment, and in some respects made improvement. On Feb. 1st, 1931, I obtained permission from Dr. Cobb to try the effects of four weeks' diathermy treatment. This was given in the way already described, patient taking up to 2000 milliampères for 30 minutes, four times a week. After three treatments she stated that for the first time for years—13 years she actually said—she felt an impulse to defæcate occasionally in the morning, and was able to obtain one action a day, aided by one dessertspoonful of petrolagar. A great improvement took place in the results of colonic irrigation. She was eventually able to return two and a half pints of fluid (the whole amount given) in about 15 minutes.

Results of a colonic irrigation on March 28th, 1931.—First douche: Considerable quantity of oil passed, with some fæcal matter, not offensive. Second douche: Fluid returned discoloured with oil and some sediment.

An X ray examination on March 30th, 1931, showed that the colon now filled normally 48 hours after the meal was taken, and the picture taken at 24 hours also showed great improvement. (Fig. 6.) From comparing the pictures there is no doubt spasm had been much relieved, and in some portions of the tract had disappeared.

FIG. 5 FIG. 6

CASE 6.—Before treatment (24 hours after meal). After treatment (48 hours after meal). The 24-hour picture is shown here instead of the corresponding 48-hour picture, as it shows the colonic spasm more clearly. At 48 hours the meal was still in the same position.

Comments

CASE 1.—The rapidity of the relief suggests a functional derangement of the innervation. The condition might have righted itself and been an argument for a do-nothing policy, but at the expense of much anxiety as well as discomfort to the patient.

CASE 2.—The mobility of the stomach accelerated the progress of the barium meal in the upper part of the

alimentary tract, and the spastic colon delayed it below, both things suggesting an over-action of the innervation of the alimentary tract.

CASE 3.—May I allude here to a drawback which exists for the private practitioner when it is necessary to confirm a view? In institutional practice the patient under treatment can be urged to continue a routine which is proving beneficial as long as medical advice recommends, while the radiographic and bacteriological examinations can be made at will. In private practice such examinations cannot be made without the endorsement of the patient; nor can pressure be put upon the patient to continue the treatment, although the doctor may be convinced that further improvement would result.

CASE 4.—A typical case of atonic constipation, the improvement being due to a stimulating effect of the high-frequency current. The contracting power of the colon improved, as shown by the fact that it was able to expel two and a half pints of fluid in 20 minutes, instead of 45.

CASE 5.—This case, while not being typically spastic, falls into the spastic class: to quote from the Windsor Clinic report "abnormally strong contractions of the cæcum and transverse colon and yet delay in passage of the meal—particularly in that portion of the gut." From the X ray films it seems that she had a certain amount of dyschezia. She would have benefited by an after-treatment of rectal diathermy and she was advised to obtain it elsewhere, as she was leaving London. She has written twice to say that the improvement has been maintained.

CASE 6.—The emptying time of the colon showed no change, but as the patient had taken aperients during the whole course of her first X ray examination and had not taken any during the second, the result was not disappointing.

The cases were picked from a group which has come under treatment during two years, where the constipation appeared to be the prime factor to be relieved. All who followed the course with perseverance were relieved in varying degrees. Those with very obstinate long-standing constipation were on an average enabled to reduce their aperients to a third of the previous quantity, and the milder cases were able to discontinue them entirely. I should like to stress this point, as the obvious criticism of the cases is that at the end of the course they were still taking aperients. It must be believed that the cases I have selected were the most obstinate and difficult ones. In reply to those who maintain that all constipation can be cured by "rational treatment"—i.e., diet and improving the patient's mental attitude—I would point out that five out of the six cases quoted had all been treated on "rational lines" at some period or other before I saw them without the slightest result. There are many conflicting opinions as to the results of chronic constipation, and this would be expected considering the variety of its causes and association, but it cannot be otherwise than harmful if left unrelieved. There may be justification for urging upon the patient the necessity of not dwelling too much on the condition, which undoubtedly sometimes rights itself without treatment after attention to diet and regulation of the mode of life. But when it does not, which is the commoner event, the physical trouble and the mental strain may be considerable. Therefore, any procedure that offers a good chance of relief, at any rate in certain groups of these cases, should receive trial, if evidence of a promising sort is forthcoming.

CLINICAL AND LABORATORY NOTES

CARCINOMA OF THE BRONCHUS

BY A. ADAMS, M.D. LIVERP., D.P.H.
MEDICAL SUPERINTENDENT OF THE LIVERPOOL SANATORIUM, PRODSHAM

A MAN, aged 36, a dock labourer, unmarried, was admitted to the Liverpool Sanatorium on April 16th, 1932, with a diagnosis of pulmonary tuberculosis, physical signs having been found at the right apex. There was nothing of interest in the family history; he had whooping-cough in childhood but no other serious illness until he had trench-fever and malaria in the army in France, 1917. He was demobilised as "A 1," and has been at work ever since, but states he had some recurrence of malaria. In March, 1932, he complained of tiredness, cough, expectoration, and some dyspnœa, also pain referred to the lumbar area and slight staining of his sputum.

On examination he appeared fairly robust; height 5 ft. 3½ in., weight 8 st. 4 lb. There was some consolidation over the upper area in the right chest, expansion diminished, vocal fremitus equal, breath sounds coarse and diminished, and vocal resonance equal with post-tussive râles to third rib in front and sixth spine behind. Heart and other organs all normal, no palpable glands, no œdema, no clubbing of fingers. Radiography showed diminished movement in the right chest, displacement of the trachea to the right, and the right diaphragm higher than normal. Colon and splenic flexure appeared distended, the heart globular and median; there was a well-marked shadow in right upper zone of uniform opacity and sharply delimited by the upper interlobar septum.

A number of examinations were made of his sputum and all proved negative for tubercle bacilli. The urine was normal. The Wassermann reaction was negative, and a provisional diagnosis of neoplasm of the lung was made, mainly on the radiographic evidence. On April 20th he complained of severe lumbar pain with constipation, for which enemas were required. The urine was still normal. On the 26th he complained of pain at right hypochondrium, but nothing abnormal was found in the abdomen, which could be freely palpated. On May 2nd he had weakness in his legs and was confined to bed; there was no rise of temperature, but the knee-jerks were found to be exaggerated, and there was ankle-clonus.

On May 3rd there was some retention of urine, relieved by postural change. On the 6th he had complete paresis of both legs with anæsthesia, and the paraplegia gradually ascended to the level of the umbilicus. On the 8th a catheter was passed to relieve overflow distension of the bladder, 63 oz. of clear urine were withdrawn and the patient appeared perfectly normal and relieved, but a few minutes later suddenly collapsed and died. On the 9th a partial post-mortem examination was made.

Chest.—There were some adhesions of the parietal and visceral pleura over the right upper zone which were removed with the specimen. The right upper lobe was a fairly solid mass, all the other lobes seemed normal, a section made into the right upper lobe showed a mass of neoplasm advancing from the bronchus through the lung tissue and about the size of a tangerine orange; there was a small amount of thick purulent material in the upper division of the bronchus, and the lobe was collapsed. The other lobes and heart were not interfered with, as a museum specimen was desired, and they appeared to be quite normal; on the right side of the body of the eighth dorsal vertebra, just anterior to the transverse process, a small nodule was noticed and removed for section, it was about the size of a pea, firmly adherent, extra-pleural, and, on section, of a firm almost cartilaginous consistency.

Abdomen.—Liver was normal in size, surface, and section. The gall-bladder was normal, the spleen slightly smaller than normal. The kidneys were normal in size, and on section, and the capsule stripped freely; there was no sign of distension of pelvis or ureters. The intestines showed some distension, particularly of the descending colon, with scybalous masses; they were otherwise normal. The bladder was normal in position and size and there were no signs of any inflammatory lesion or distension; no trace of any metastatic growths could be found other than the suspected small nodule on the side of the vertebra. The

spinal cord was not removed owing to the limited examination permitted.

The specimens removed were submitted to Prof. J. H. Dible of the pathological department of the University of Liverpool, who reported that this was an oat-celled type of pulmonary carcinoma, and that the separate piece (removed from spine) shows a large metastasis in connexion with a nerve (spinal nerve ?) and ganglion. The latter is invaded.

Three points of special interest are illustrated by this case: (1) the remarkably short history since the onset of symptoms, not exceeding two months; (2) the peculiar metastatic extension by the root of a spinal nerve, involving apparently the lower segments of the cord; and (3) the sudden collapse of the patient after using a catheter for the first time. This untoward result is usually mentioned in works on surgery as a possible complication but is rarely seen or recorded.

FUNCTIONAL APHONIA

SOME OBSERVATIONS ON ITS CLINICAL ASPECTS

By F. Douglas Marsh, *M.C.*, M.B. Camb., F.R.C.S. Eng.

HON. AURAL SURGEON AND LARYNGOLOGIST TO CHILDREN'S HOSPITAL, AND HON. SURGEON TO EAR, NOSE, AND THROAT DEPARTMENT OF QUEEN'S HOSPITAL, BIRMINGHAM

Functional aphonia is an inability to produce the voice owing to failure of the neuromuscular apparatus in the absence of organic disease. Morell Mackenzie [1] pointed out that the beginning of functional aphonia is a laryngitis, and that when the laryngitis clears the patient cannot sufficiently contract the muscles that adduct the vocal cords. A patient "catches cold," the larynx is congested, and hoarseness or aphonia occurs. The congestion disappears but aphonia remains owing to the feeble approximative power of the cords.

A summary of 16 cases seen by me in 1931 shows very clearly with what frequency functional aphonia is associated with sepsis in the upper air passages.

Case.	Sex.	Age.	Associated sepsis.
1	F.	35	Large infected tonsils.
2	F.	51	Carious teeth.
3	M.	38	Very septic tonsils.
4	F.	43	Infected right antrum.
5	F.	19	Septic tonsils and chronic suppurative otitis media (R.).
6	F.	22	Septic teeth.
7	F.	29	No sepsis (but this patient could sing).
8	F.	22	Septic teeth.
9	F.	30	Infected antrum (L.).
10	F.	22	Infected right antrum and septic teeth.
11	F.	38	No sepsis found.
12	M.	29	Infected left antrum.
13	F.	52	Infected left antrum.
14	F.	42	Septic teeth, tonsils and nasal septum deviated to right.
15	F.	36	Infected left antrum.
16	F.	21	Nasal catarrh.

Thus antrum disease is present in six cases, septic teeth in five, and septic tonsils in four cases. In one case the patient, while not being able to speak above a whisper, could sing in full tone and no associated sepsis was found. In only one other case was no sepsis found.

Functional aphonia is synonymous with hysterical aphonia. During the war hysterical aphonia was extremely common, and the literature of that period alludes only to the hysterical type. I find it is advisable to classify functional aphonia into two classes: primary and secondary. The primary class is exemplified by the hysterical cases, such as Case 7, and the secondary class by the cases that start with laryngitis secondary to a septic focus in the upper air passages.

Other writers have drawn attention to the association of functional aphonia with other diseases. Sir StClair Thomson [2] says: "It is well to be warned and not dismiss cases of aphonia as merely functional, they must be examined for tubercular disease." Jobson Horne [3] likewise says: "It is of first importance to exclude a diagnosis of pulmonary tubercle." P. Watson-Williams [4] distinguishes between functional and pseudo-functional aphonia due to organic mischief and weakness, and found pus in an antrum in one case.

The series of cases quoted shows very clearly that a determining cause is often present. When found, it should be treated, and should be regarded as no less important than the restoration of the voice. Stuart Low [5] is dogmatic on this point; he places such patients in favourable surroundings and removes the tonsils, adenoids, and all nasal obstructions. There is seldom any difficulty in obtaining complete restoration of the voice, whether by electrical stimulation or by suggestion, or by instruction in proper voice production. Treatment of the original cause by dealing with the septic focus will improve the health of the patient and render a relapse far less probable.

REFERENCES

1. Mackenzie, Morell: Disease of the Throat and Nose, vol. i., p. 464.
2. Thomson, StClair: Proc. Roy. Soc. Med., 1914–15, viii. (Laryngological Section).
3. Horne, Jobson: Ibid., 1915–16, ix.
4. Watson-Williams, P.: Ibid., 1914–15, viii.
5. Low, Stuart: Ibid., 1919–20, xiii.

RUPTURE OF HEART IN COAL-GAS POISONING

By R. J. V. Pulvertaft, M.B. Camb., M.R.C.P. Lond.

DIRECTOR OF JOHN BURFORD CARLILL LABORATORIES, WESTMINSTER HOSPITAL; READER IN PATHOLOGY IN THE UNIVERSITY OF LONDON

Spontaneous rupture of the heart is by no means uncommon as a cause of sudden death; two such cases have been examined by me in the last six months. Patients are always elderly, and the condition is therefore commonest in institutions for the care of the aged infirm. The rupture in such cases is practically invariably in the left ventricle, and follows thrombosis of the coronary artery.

The following case is of some interest since the patient was aged only 19; the rupture was in the right ventricle, and there was no evidence of cardiac or vascular disease. The patient, a female, had committed suicide in a fit of temper by putting her head in a gas oven. The usual signs of carbon monoxide poisoning were present; in particular Tardieu's spots were very prominent over the diaphragm and the visceral layer of pericardium.

The post-mortem was performed 11 hours after death. On opening the pericardium, about 12 oz. of uncoagulated blood were found. A tear ¾-inch long was found on the anterior aspect of the right ventricle, about 1 inch from the apex, and ¼-inch lateral to the interventricular septum. A section taken through this area showed no evidence of any

disease; there was no chronic endocarditis or myocarditis. The coronary arteries were quite normal.

The patient was suffering from acute gonorrhœa, but there was no evidence of syphilis. No reference has been found to the occurrence of this lesion in coal-gas poisoning or in asphyxia. Since, however, the right side of the heart is greatly dilated in these conditions, and in view of the fact that Tardieu's spots are caused by rupture of capillaries, it is not altogether surprising that the thin-walled right ventricle should occasionally give way.

The fact that only 12 oz. of blood were in the pericardial sac suggests that the rupture occurred at the moment of cessation of the heart's movements.

REVIEWS AND NOTICES OF BOOKS

Recent Advances in Anæsthesia and Analgesia

By C. LANGTON HEWER, M.B., B.S. London: J. and A. Churchill. 1932. Pp. 187. 12*s*. 6*d*.

THIS book gives a capital exposition of what may be called the new school of anæsthetic administration. Simple methods hardly come within its consideration at all. It is largely taken up with machinery and multiple drugs. Dr. Langton Hewer takes for granted in his readers a knowledge of the general principles of administration of anæsthetics and of the physiological action of the chief anæsthetic agents, but good summaries are provided of the physiological action of each, and of the theories of the causation of anæsthesia. Among the causes of primary cardiac failure Dr. Hewer includes, it is interesting to observe, the banished status lymphaticus, and he gives the most recent explanations of this condition, vagotonia, calcium deficiency, and endocrine dysfunction. The basal narcotics are well and succinctly discussed, as is also the use of carbon dioxide in induction, maintenance, and de-etherisation. Special chapters are given to thyroid, abdominal, and thoracic operations and to anæsthesia in obstetric work, and a considerable section of the book deals with local analgesia. Every chapter is finished off with a list of the references in the preceding pages. The book is excellently printed, and is one which will be valued by every anæsthetist who reads it. Dr. Hewer attributes the occasional squint following spinal injection to a septic origin, in which explanation he will not, we think, be generally followed; nor do we hold with his recommendations for the handling of cases of acute intestinal obstruction. These are instances when simple methods are better than complicated ones. With these unimportant exceptions, however, we find ourselves in agreement with all that he writes, and congratulate him on an admirable contribution to the literature of anæsthesia.

Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes

Fifth edition. By HUGH MACLEAN, M.D., D.Sc., F.R.C.P. London: Constable and Co., Ltd. 1932. Pp. 219. 12*s*.

THE fifth edition of this book has now been issued, after a lapse of five years. During this time some notable advances have been made in the dietetic treatment, but little or no alteration has been made in the dietetic régime here advised. For the ordinary patient the treatment is still started with a period of starvation, and the diet increased day by day up to 58 g. of carbohydrate, 65 g. of protein, and 64 g. of fat. A starvation day is very valuable in the treatment of a mild case, since the symptoms disappear at once, but the balance of the diet with its high fat content (164 g.) is very different from that used by many workers abroad and in this country. Some advocate a fat ration as low as 50 g., and although this may be too low, it seems certain that the fat ration should not be much more than 100 g. The amount of carbohydrate which is here recommended for patients with severe diabetes requiring insulin is apparently less than 20 g. Again, the modern tendency is to increase the carbohydrate up to at least 100 g., and some even advocate 250 g., provided the fat ration is only 50 g.

The food tables especially need revision. They are still arranged in an inconvenient form, the amount of carbohydrate being given for each ounce of food. In order to exchange one kind of food for another, and yet keep the carbohydrate value the same, a certain amount of calculation is necessary. The method of showing in a table the different amounts of food which contain 5 g. of carbohydrate makes it very much easier for the diet to be varied at will. The new values for the carbohydrate content of food, estimated by Lawrence and McCance, have been ignored; thus 14 oz. of cabbage are said to contain 21 g. of carbohydrate, whereas the value now generally accepted is only 5 g.; similarly 4 oz. of strawberries are said to contain 8 g. instead of 5 g. The actual amount of carbohydrate consumed by any patient whose régime is based on these tables is therefore considerably less than it is reckoned to be.

The main body of the book is unchanged. It gives a good account of the pathology and diagnosis of diabetes mellitus. The title-page describes Prof. Maclean as director of the medical clinic at St. Thomas's Hospital, a post which he vacated some six months ago.

Lehrbuch der Mund- und Rachen-Krankheiten

Edited by JOSEPH BERBERICH. Leipzig: Georg Thieme. 1932. Pp. 587. M.53.

THIS book is intended more especially for surgeons and dentists, and their students, but it is suggested that it will also be of interest to nose and throat surgeons, dermatologists, physicians, and general practitioners. It deals chiefly with diseases on the borderland of those which concern dentistry. It contains preliminary chapters on embryology, anatomy, and physiology, and articles on such divers subjects as hare-lip and cleft palate, empyema of the antrum, diseases of the salivary glands, and tumours of the mouth, throat, and jaws. Numerous authors have taken part in the compilation of the work, and there is some overlapping; thus glossitis receives two pages in the chapter on inflammatory changes in the mouth and throat, and is discussed again at greater length in an article on alterations of the mucous membrane in diseases of the skin. This article contains an account of many rare conditions which may affect the buccal mucous membrane; keratosis of the tonsils and throat gets a few lines here, and is fully described and illustrated under metaplastic changes. In a work of this kind it is difficult to draw a boundary of the regions to be included; here diseases of the throat are described as far as the hypopharynx, and the larynx escapes

mention; in the section on radiography paralysis of the act of swallowing is described and illustrated, as well as pharyngeal diverticula, but diseases of the œsophagus are not discussed. The complications of general diseases receive full attention, and there is an excellent account of buccal lesions in the infectious fevers.

The book is unusual in scope, and somewhat uneven in merit, but contains much of interest and value, and some information not readily accessible elsewhere.

Old Beliefs and New Knowledge

By WILLIAM RUSSELL, M.D., LL.D. London: John Bale, Sons and Danielsson, Ltd. 1932. Pp. 208. 5s.

Prof. Russell strives here to make clear the reasons for the persistent antagonism between religion and science, and to reconcile the differences between traditional belief and the scepticism born of recent knowledge. He is espousing a winning cause, for all the best thinking of to-day is directed towards such a rapprochement. Dr. Russell looks at the historic and archæological evidence which allows us to estimate primitive man's mental faculties, and to understand the development in him, by sequence, of mechanical skill, organising power, and artistic faculty, the general deduction being that man's early belief in a spiritual world made of him the highest product of creative power on the planet. A brief analysis of early religious beliefs and practices in the habitable parts of the globe is followed by an outline of early Greek and early Jewish civilisation, when the author finds Divine inspiration as applicable to the Hebrew as to the Greek. The foundation of enlightened religion to-day being the belief in a great First Cause, man's development is left to himself as the possessor of free will, by which to test and choose his lines of conduct. The book ends with two wise chapters entitled "Unrest To-day" and "Civilisation at the Cross-Roads," and forms in its close arguments and simple writing a useful guide to clear thinking.

Électricité et radiologie médicales

By Dr. LEON GALLY, Radiologiste des hôpitaux de Paris; and Dr. PIERRE ROUSSEAU, Chef du Laboratoire d'Electrologie à la Faculté de Médecine de Paris. Paris: Libraire Armand Colin. Pp. 217. Fr.10.50.

IN the first part of this book, which deals with medical electrology, the different currents are described together with their properties and therapeutic uses. The diseases of the various systems of the body that can be benefited by electrical treatment are placed in alphabetical order in a special chapter. Without entering into detail the authors give in outline the form of treatment which they consider useful in each condition. There is a brief chapter on electro-diagnosis and some notes are added on the chronaxie.

In the second part of the book the physics and electro-technics of radiology are outlined, and each part of the body is studied from a radiological point of view, with indications for X ray treatment and a warning of the risks which have to be avoided. An electrode, little known at present, but likely to prove useful, is described on p. 71. It is one of the "vacuum" type. Being made of quartz instead of glass it allows the ultra-violet rays that are generated inside the electrode to pass through the walls. By its means it is possible to subject to the action of the rays certain passages and cavities which cannot be irradiated from the usual sources of these rays.

The descriptions are lucid, and the book—which is not too large for the pocket—will be useful to the student or practitioner who does not wish to make a special study of the subject but desires to know a little about it.

Greek Byways

By T. R. GLOVER. Cambridge: University Press. 1932. Pp. 319. 12s. 6d.

THIS collection of Dr. Glover's essays on Greek life and thought makes thoroughly interesting reading; the real learning and the intimate familiarity with Greek literature, as well as with the vast literature that has grown up around it, are never allowed to hamper the straightforward telling or the thread of the argument. For those who want to test the sources of the statements copious accurate references are supplied in footnotes, where they do not intrude upon the themes. The familiar comment on the course of all things, that the more they change the more they are the same, is found true over and over again in these pages, especially in such fascinating chapters as those entitled "The Manners of the Gentleman," "The Boy and the Theorist," and "The Wandering Greek." An essay on the study of ancient history is timely in view of the fact that so much is being written at the moment on the origins and developments of medicine as they can be traced in the literature of various epochs. Dr. Glover's conception of history contains a warning against too much specialism, or confiding different sections to different authors.

"A history," he says, "that is to illuminate the path, to make it significant, to bring out not merely its meaning, but what it really is, cannot be cut up in this way. A great movement has a certain unity, whether it reaches over months or centuries; you cannot with real truth make monthly records of it. Such records might be of use, like the 'almanack' of Boswell's jest, but only in a subsidiary way. The man who makes them has to be a hodman, the scientific historian to the philosophic, the scholar to the thinker, the 'original' researcher to the man who uses his researches—the brickmaker, in fact, to the architect."

Dr. Glover's reference here is to those manuals of history which cover a set period and make it easy for students to master, or at any rate to retain for examination purposes, the details of an epoch without any real comprehensive history in sequence. There is no fear of exactly this occurring in the history of medicine proper, because there are not enough known facts to supply the material for such sectional treatment; but a different kind of specialism is present and appears to be inevitable. To write a complete history of medicine would call for knowledge of much archæology, and of the tenets of many schools of philosophy; several languages would be needed, and familiarity with the beginnings and developments of most sections of natural history and of the fundamental sciences. To collate all this general wisdom as it grew up with what is known of its application, successful or otherwise, to the calling of medicine would form an impossible task for any one author; but such a work wants doing by a team, with one coherent plan before them.

Journal of Pathology and Bacteriology

THE July number (vol. xxxv., No. 4) contains the following papers:—The Process of Formal Detoxication: Experiments with Purified Staphylococcal Toxin, by F. M. Burnet and M. Freeman (Melbourne). Formalin is well known to destroy the poisonousness of many bacterial toxins, leaving their antigenic efficiency relatively unimpaired. The authors have studied the process in detail; the rate of detoxication varies with the strength of the formalin, the reaction and the temperature and the process is to some extent reversible.—The Influence of Avidity upon the Standardisation of Antitoxins, by A. T. Glennie, M. Barr, H. E. Ross, and M. F. Stevens (Beckenham). The varying firmness with which toxin combines with antitoxin produces many unsuspected pitfalls in standardisation; the combination sometimes comes undone quite easily.—The Titration of Antipneumococcus Serum, by W. Smith (London). In a thorough piece of work the author has compared the powers of antipneumococcus sera to give precipitates with the corresponding soluble specific substance of the organisms and to protect mice against fatal infection. He finds good correspondence.—Causes of Cell Death in Irradiated Human Tissue, by B. D. Pullinger (Northwood). Radium injures capillary endothelium which leads to hyperæmia, and in more severe cases to exudation of serum, extravasation of blood, and thrombosis; the cells are killed by these vascular changes, and in the later stages by the pressure of the fibrosis which ensues.—Observations on Solitary Plasmocytoma, by M. J. Stewart and A. L. Taylor (Leeds). Four examples of this rather rare tumour in the humerus, maxilla, soft palate, and floor of mouth. It is not very malignant and can sometimes be cured by local operation.—The Bactericidal Power of Normal Serum, by J. Gordon and H. S. Carter (Leeds). The capacity of normal serum to kill bacteria depends on the organisms being sensitive to non-specific substances which may be removed by adsorption.—Primary Carcinoma of the Liver: a Study of 134 Cases, by J. C. Tull (Singapore). About three-quarters of liver cell type histologically, about one-quarter from bile-ducts. Cirrhosis was generally present and metastases not abundant.—Chorion-epithelioma of the Testis, by J. M. Ross (London). In a man of 30 with widespread metastases, those in the lung identical structurally with typical chorion-epithelioma.—A Congenital Abnormality of Hair Follicles in Dogs resembling Trichostasis Spinulosa, by T. Hare (London). Rhodesian "ridgeback" dogs often have remarkable tubular invaginations of the skin in the midline of the back which may be overgrown hair follicles: the condition is probably heritable.—The Routine Preparation of Diphtheria Toxin of High Value, by C. G. Pope and M. Llewellyn Smith (Beckenham). All experience shows that horses produce the most potent antitoxin if they are dosed with strong toxin. The addition of sodium acetate and maltose to tryptic digest broth is desirable, the medium should have a large air surface, and the temperature should be rather less than 37° C.—Experimental Nephritis Produced by the Styryl Quinoline Compound No. 90, by H. L. Sheehan (Manchester). The drug causes necrosis of the convoluted tubules with secondary fibrotic atrophy of the glomeruli, and the blood-urea and concentrating power of the kidney are altered in correspondence with the anatomical lesions. Moderate amounts of the drug are excreted by the kidney without damage; larger quantities accumulate in the cells and kill them.—The Occurrence and Distribution of Intranuclear "Inclusion Bodies" in Gliomas, by Dorothy S. Russell (London). Appearances similar to those seen in some virus diseases were found in a third of the gliomas examined, also in the liver in a large proportion of cases of Hodgkin's disease and in a few other cases.—The Gonococcal Fixation Test: Further Improvements in Technique Resulting in Increased Sensitivity, by I. N. O. Price (London).—The Coagulation of Milk, by *B. typhosus* and other Bacteria Considered Inactive on Milk, by C. Gorini (Milan). This rennin-like action is best shown by covering well-grown agar cultures with sterile milk and incubating for several weeks.—The Different Forms of *Corynebacterium diphtheriæ*, by J. Menton (Stafford). The existence of two forms of the diphtheria bacillus which may generally be distinguished by cultural characters as described by McLeod is confirmed but their colonial forms are not always constant. There is no obvious association between the type of bacillus and the severity of the disease.—*B. diphtheriæ—gravis* and *mitis*, by H. J. Parish, E. E. Whatley, and R. A. O'Brien (Beckenham). McLeod's separation of two forms of the bacillus by cultural methods is confirmed though a certain number of indeterminate strains occur. But his *mitis* form is as virulent for animals as his *gravis*, it produces stronger toxin and may cause serious illness and death. Half the very mild human cases yielded *gravis* bacilli, and also half the very severe cases.—The Significance of Agglutinins for *Brucella abortus* in Human Sera, by J. D. A. Gray (Liverpool). Owing to the common occurrence of the organism in milk, many people have been subinfected and show specific agglutinins in their blood. This makes the diagnosis of active infection difficult, and the author finds it helpful to separate the agglutinating proteid into the fractions soluble and insoluble in CO_2.—Experimental Tuberculosis in Mice: the Offspring of Infected Mothers, by C. H. Browning and R. Gulbrausen (Glasgow). No clinical, anatomical, or microscopical evidence of infection was found in 30 mice born of tuberculous mothers and living with them for weeks or months after birth.—Consequences of Salmonella Infections of Eggs, by W. M. Scott (London). Ducks may be infected with *B. aertrycke*, lay infected eggs, and so cause human food poisoning.—Ducks and Salmonella Infection, by T. Dalling and G. K. Warrack (Beckenham). Ducks sometimes lay eggs infected with Gaertner's bacillus which is not destroyed by the ordinary processes of domestic cooking.—Obituary Notices of F. W. Andrewes (portrait) and H. Seidelin.—Proceedings of the Pathological Society of Great Britain and Ireland.

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[*See also pp.* 17, 24, & 25.]

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THE LANCET

LONDON: SATURDAY, AUGUST 6, 1932

THE COST OF MEDICAL CARE

SOME time ago Dr. OLIN WEST, the secretary of the American Medical Association, described the outstanding problem before the medical profession to-day as "the delivery of adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." This is a problem that becomes more urgent with the increasing complexity of modern medical practice. Successful treatment in many cases to-day demands team work—the coördinated services of several practitioners of special experience and skill. Formerly the family doctor dealt with a case of rheumatism out of his own knowledge and experience. Now he may need the help of the radiologist, the laryngologist, the rhinologist, the bacteriologist, and the dentist, separately or in some form of combination, before he can assume the responsibility of prescribing a course of treatment that is fairly directed towards the source of the trouble. Thus modern treatment becomes more effective, but more costly, and there is a universal feeling that the position should be straightly faced. In most European countries it has been sought to provide the industrial population with medical care by establishing a scheme of compulsory insurance against sickness, the scheme being maintained by contributions from the workers, their employers, and the State. The schemes tend to expand, not only in the range of medical services provided, but also in the number of occupations to which compulsory insurance applies. Drs. GOLDMANN and GROTJAHN in a monograph upon the benefits of the German sickness insurance system estimate that about 80 per cent. of the German medical profession work for the sickness funds, and that more than one-half of all incomes from medical practice is drawn from sickness insurance. In Germany, where compulsory sickness insurance originated, the field of private practice tends to become more and more restricted with the increasing provision of medical services through the sickness insurance scheme.

In America the problems of medical care are being attacked on different lines. A movement for compulsory sickness insurance, conducted during 1914–20, was completely unsuccessful, largely owing to the opposition of the medical profession. Insurance bills were introduced into several State legislatures but not one was passed, and there has since been no revival of the movement. But the defeat of the supporters of compulsory sickness insurance did not solve the problem defined in the quotation from Dr. OLIN WEST at the beginning of this article. In spite of the immense amount of unpaid and underpaid work done by the American medical profession, it was evident that large sections of the population could not meet the cost of the medical services of which they had need. In 1927 a strong representative body, the Committee on the Cost of Medical Care, was formed under the chairmanship of Dr. R. LYMAN WILBUR, now Secretary of the Interior, to consider the question, and began a five years' course of study, during which several valuable reports have been published. The latest of these embodies the results of an investigation conducted at the request of the Committee by the National Bureau of Economic Research in New York [1] into the extent to which the American people employ the insurance principle to secure medical and hospital care. The report, which is the work of Mr. PIERCE WILLIAMS, the executive director of the Bureau, assisted by Miss ISABEL CHAMBERLAIN, describes several methods in operation in the United States by which individuals, in consideration of a fixed amount paid periodically to some organisation, are assured of medical and hospital care from that organisation, in case of incapacity due to injury or disease not already covered by workmen's compensation laws. It appears that what was known as the poundage system in this country exists in the United States, chiefly in the mining, lumber, and railway industries. In 27 of the important American railway systems a fixed sum is deducted from the remuneration of each employee, from the president of the company downwards, to form a fund for the provision of hospital treatment when necessary, the hospitals usually being owned by the company. Similar arrangements are made in other industries, usually those carried on in isolated places where without some such provision medical services would not be available. This type of fixed payment medical service affects only a very small number of persons, and is of no particular significance.

There are, however, four other types which are considered to be of considerable significance, because they have developed in towns in which it could not be said that the number of medical practitioners or the facilities for hospital treatment were inadequate for local needs; and they may possibly indicate the lines on which medical practice may in future be conducted in America. These types are: (1) private group clinics; (2) community health associations; (3) non-profit community hospitals; (4) medical benefit corporations. The most important is the private group clinic, which formed the subject of a report by Mr. C. R. ROREM, Ph.D., published by the Committee on the Cost of Medical Care in 1931. This type of clinic, of which there are over 150 in the United States, mostly in the Middle West, is an organisation of a number of doctors, usually about 12, engaged in "coöperative and contiguous medical practice," in most cases on a whole-time basis. They have many facilities, such as waiting rooms, laboratories, and other equipment, in common; and each patient is the responsibility of the entire group of practitioners,

[1] The Purchase of Medical Care through Periodic Payment. New York: National Bureau of Economic Research, 1932. Pp. 320. $3.

not of any individual practitioner. The income of the clinic is pooled and distributed among the practitioners as agreed between them; they have little or no direct financial relations with the patients. On the business side the clinic is administered by a layman, who is responsible for the collection of fees and for investigations into the financial positions of the patients. The clinics have private patients who pay the ordinary professional fees, but there is an increasing tendency to provide treatment on a contract basis. Particulars are given by Mr. WILLIAMS of a clinic organisation of 20 doctors in a city on the Pacific Coast, which has entered into agreements with a number of associations formed by persons employed in large department stores and other commercial undertakings to provide medical, surgical, and maternity services. The employer deducts two dollars monthly from the remuneration of each employee and pays it to the employee's association, which pays it to the clinic. The range of services provided by the clinic is extensive, including hospital treatment, and the services of outside specialists if necessary. Mr. WILLIAMS attaches importance to this "combination of group medical practice with group purchase on a fixed payment basis," which he thinks may be widely extended. Hitherto, the American medical profession has viewed contract practice with disfavour, but in some places the group clinic system appears to be growing in popularity among the doctors, and if it spreads it may become the American substitute for the European schemes of compulsory sickness insurance, and may, indeed, be developed in Europe to provide treatment for the increasing number of persons outside those schemes who are unable as ordinary private patients to meet the increasing cost of medical care.

THE TOXICITY OF THE TEES

TEES was once a noble salmon river. But its waters are fouled by the crude sewage of Middlesbrough and Stockton and other places (representing a total population of about 275,000) together with the industrial effluents from iron and steel processes. The adult fish are killed in trying to pass up through the reaches of the estuary on their way to the spawning grounds or in descending to the sea as kelts after spawning. Further, the young salmon and sea trout in the smolt stage are killed during their seaward run in April, May, and June. The Water Pollution Research Board published last year its preliminary "Hydrographic Survey of the River Tees"[1] and there has since been a further inquiry into the causes of death of salmon and sea trout smolts in the estuary.[2]

The industrial pollution of the Tees consists mainly of (1) coke-oven effluents produced in making the coke used locally for iron smelting, and (2) spent pickle liquor produced after cleaning steel sheets or wire in concentrated hydrochloric acid before galvanising. As regards the coke-oven effluents, there are two ways of recovering ammonia from the coke-oven gas—one a direct method, the other semi-direct. At a rough estimate, 10,200 cubic metres are discharged per 24 hours by the former method and 280 by the latter. The hydrographic survey showed us how pollution can remain in the estuary for days before escaping finally into the open sea. In this period there must be oxidation (biological in the case of sewage and industrial effluents, chemical in the case of pickle liquors) which means that a belt of water in the middle of the estuary is partially deoxygenated. Experiments were made with a supply of running water at a temperature of 15·5° C. with a dissolved oxygen content of 58 to 64 per cent. of the saturation value. Rainbow trout, whose viability is of the same order as that of smolts, lived comfortably in this water for four days. In the early part of the smolt migration of 1930, when the water temperature was low, smolts were found dying in water having a dissolved oxygen content of not less than 70 per cent. of saturation. The investigators thus had to look for some other cause of the mortality than oxygen deficiency alone. Fresh sewage or sewage undergoing aerobic decomposition, when diluted with river water, seems to have no toxic action on fish during short periods. The pickle liquor, with its readily precipitated ferrous chloride, seemed not to contribute to the toxicity of the Tees, except perhaps in restricted areas. The investigators turned therefore to the toxicity of the coke-oven effluents. A series of interesting experiments with rainbow trout has proved that the directly toxic substances discharged into the estuary are principally tar-acids and cyanides from coke-oven effluents, and it has been established that the smolt mortality is chiefly due to cyanides. This confirms the conclusions of LEHMANN in his work on the Leine (1926). We have now no excuse for under-estimating the significance of cyanides in industrial pollution. Concentrations of potassium cyanide were found to be more toxic at a higher than at a lower temperature; solutions of cyanide in water were found more toxic as the oxygen content was reduced. The removal of cyanides from dilute solutions by the use of formaldehyde was studied; the destruction of toxicity by this method is a valuable piece of research. In this connexion, as the gills of the poisoned smolts have a characteristic bright colour, a useful "gill colour scale" has been evolved. The smolt migration of 1931 was carefully watched. The position of the toxic belt in the estuary is apparently determined partly by the tidal range, partly by the volume of fresh water coming down from the upper river, and partly by other causes. The majority of smolts were killed at about the time of high water; in dying they collected near the banks and were left stranded on the ebb. They were found at low water in reaches which had been occupied by toxic water—i.e., water made toxic by cyanides—at high tide.

The study of river pollution is one of the opportunities for impressing commercial interests with the practical value of scientific research. The work described above should well fulfil this purpose.

[1] See THE LANCET, 1931, i., 306.
[2] Biochem. Jour., 1932, xxvi., 273.

ANÆSTHESIA FOR ABDOMINAL OPERATIONS

THE part which the anæsthetic plays in determining the success or failure of an abdominal operation can scarcely be overstated. Few will question the truth of Prof. FINSTERER'S opinion, as expressed in recent numbers of a Viennese medical journal,[1] and epitomised in a paper which he read before the Anæsthetics Section of the British Medical Association, that "in abdominal operations anæsthesia is of much higher importance than in any other operation." In support of this contention he urged that in all acute disease of the gall-bladder and stomach, as well as in chronic disease of these viscera, the parenchymatous organs, most of all the liver, are already damaged, so that further damage caused by general anæsthesia might be followed by death from insufficiency of these organs. This forms the logical basis of his practice, which is to use some form of local analgesia for opening the abdomen, and for most of the operation depending on a quite short inhalation, usually of nitrous oxide and oxygen, during the mobilising of an adherent organ. The mental attitude of the patient towards his ordeal, a formidable one when a long laparotomy is carried through, is cared for by the administration of 0·02 g. pantopon one hour before operation, and 0·02 g. morphine with 0·003 g. atropine a quarter of an hour before. There is a certain kind of fatality after a major abdominal operation which is unhappily familiar to every surgeon. We allude to those patients who, having stood a severe operation apparently well and having apparently recovered from the anæsthetic, yet peter out, as it is sometimes put, within the first three or four days of convalescence. The event is sometimes described as post-operative shock. Now it is this untoward result which Prof. Finsterer attributes to the effects of the inhaled anæsthetic added to the patient's illness.

The trauma of operation is not to be held responsible, in his view, because by eliminating general anæsthetics he has eliminated from his practice these fatalities. His figures, which are gathered from over 5000 abdominal operations performed within the last 25 years, are impressive, but more impressive are the argument and evidence by which they are supported. The figures include 1240 resections of the stomach for ulcer. The other kinds of disaster not infrequent after severe abdominal operations are brought forward as examples of the advantage of eliminating general anæsthesia, for they have disappeared or diminished with the routine use of local methods. There are deaths from acute dilatation of the stomach and deaths from pulmonary conditions consequent on operation. With regard to so-called post-operative pneumonia, it has often been asserted that the nature of the anæsthetic makes little difference, and that the trouble follows local as frequently as it does general methods. This Prof. Finsterer denies, and produces convincing figures which support the truth of his contention, at least so far as his own practice is concerned. This part of the question was fully debated at a session of the Anæsthetics Section, which followed on the day after Prof. Finsterer's paper. The nature and ætiology of post-operative lung troubles was demonstrated among others by Sir CHARLTON BRISCOE, and it is interesting to observe that the summary of his arguments was "exonerate the anæsthetist." With this Prof. Finsterer might agree, but he would not exonerate the anæsthetic. It will occur, we think, to the minds of many of those who listened to him that although he has made manifest the fine results which can be achieved by expert use of the methods which he practises so successfully, yet he has not really had the opportunity of estimating the best that general anæsthesia can offer. It is plain from his figures that his experience with purely general methods has been comparatively slight, and it is common knowledge that progress in anæsthesia has been always much more pronounced in local than in general methods on the continent, while, generally speaking, the opposite has been true in Great Britain. It seems more than likely, for example, that in Vienna there are not frequent facilities for the use of nitrous oxide and oxygen in prolonged operations in the manner in which it is so employed here in conjunction with basal narcotics.

Nevertheless, it is to be admitted that even in the most skilled hands neither nitrous oxide nor ethylene, the non-poisonous inhalation anæsthetics, can give unaided all that the surgeon needs for operating on the upper abdomen. And it is here that, it appears to us, the English view will meet the continental. The best results will be obtained by calling in the aid of local agents, not by adding to the potency of the inhaled ones. The avoidance of massive doses of ether, and of course of chloroform, is, we believe, a desideratum admitted by the best surgical opinion here as it is abroad. Much can be done, no doubt, by rapidity and gentleness in operating to minimise the drawbacks inevitably associated with deep narcosis from ether, and the general results obtained by those who exercise this skill are so satisfactory on the whole that these operators are apt to rest content with the anæsthesia which so entirely satisfies their wants at the time of operating. Nevertheless, ether remains a tissue poison, and its occasional effect in accelerating "post-operative shock" deaths is not to be escaped, even in the practice of those to whom we are now referring. The day is not far distant when it will appear remarkable that anæsthetists should ever have had to rely on saturating the whole body with a noxious drug in order to produce locally the effect which was desired. That to relax abdominal muscles we should be obliged to paralyse pretty well the whole nervous system is surely a confession of weakness. Far better if we can harmlessly abolish consciousness and produce relaxation by local methods that are also harmless. In other words, the combination of some form of local analgesia with inhalations of nitrous oxide and oxygen are at present the best that anæsthesia can offer, and

[1] Wien. klin. Woch., July 1st, 8th, and 15th, 1932.

indeed he would be an exacting person who wanted anything better than the results that can be achieved in this way in expert hands.

THE AIR OF WORK PLACES

THE whole subject of ventilation is being rewritten in relation to the reactions of the body to the atmosphere in which it lives. Its success is no longer measured by the amount of carbon dioxide present, but by the cooling of the air estimated by the kata thermometer. Here, however, British and American authorities have been somewhat at variance. HALDANE has claimed that for physiological purposes it is the wet-bulb temperature we want, the dry-bulb being of no significance. On the other hand, YAGLOU has suggested that advantage may be gained by even increasing humidity, if thereby the dry-bulb temperature is sufficiently lowered. In other words, YAGLOU places stress on loss of heat from the body by convection, as well as by the evaporation of sweat. The question has been re-examined by H. M. VERNON,[1] who finds that bodily reactions do not, as a whole, conform either to wet-bulb temperature or to dry-bulb temperature, but to something between the two. The matter is further complicated by another factor, that of acclimatisation; thus, in summer the heat-regulating mechanism of the body is set at a different level from that prevailing in winter. The average outside summer temperature was about 22° F. higher than during the winter experiments. With the regulating mechanism set by the outside temperature, acclimatisation showed itself at an experimental dry-bulb temperature of 87° F. or more, but only very slightly at 81° F. or less. Acclimatisation is related chiefly to the dry-bulb temperature. VERNON found that gross mechanical muscular efficiency fell off slightly at temperatures above 70 or 75° F., and was affected by the dry-bulb temperature of the air as well as the wet-bulb.

Great advantage in industry is obtained by controlling the heat and humidity of the air in work places; and interest attaches to the method of air conditioning described by A. L. EGAN[2] for use in deep-level hot mines. Air is compressed by a powerful pump; the heat so generated is got rid of by water cooling, while much of the contained moisture is condensed. Expansion of the compressed—and partially dried—air causes pronounced cooling. In a South African mine, 3000 cubic feet of air saturated at 95° were compressed and cooled to 80°; when decompressed this air had a temperature of only 32°. Such air admitted to the workings greatly improved atmospheric conditions for the miners. At Leeds E. M. KILLICK has been observing[3] the result of breathing air differing in temperature and humidity. Normally, only about 7 per cent. of the total heat loss takes place from the lungs, an amount which is inconsiderable if other heat loss is not impaired; hence the common experience that the mucous membrane of the mouth is less sensitive to heat than the skin. Air at a wet-bulb of up to 145° F. was tolerated, which is about the temperature at which proteins begin to undergo a change and the physico-chemical state of cell protoplasm is affected. If the subjects are at work, and so breathing more deeply, the highest temperature at which moist air could be tolerated averaged 135° F. For hot dry air the limit of tolerance was much higher, and averaged 335° F. at rest and 212° F. during work. No pronounced physiological reactions occurred as the above limits of tolerance were approached; a sensation of burning was felt in the mouth and throat, with redness of palate and fauces; but sweating was noticeably greater when the wet-bulb temperature of the inspired air was above body temperature. Such information is important, since during the use of self-contained breathing apparatus in rescue work, the air circulating in the apparatus becomes heated and saturated with moisture; and we require to know the permissible limiting temperature of inspired air to which a man wearing such an apparatus may be subjected while resting and doing work.

Observations such as these just instanced indicate how much remains to be learned as to how the body maintains itself in health—and only so can disease be held from the door.

[1] Jour. of Hyg., July, 1932, p. 431.
[2] Engineering, September, 1931.
[3] Jour. of Hyg., July, 1932, p. 332.

THE death was announced on July 28th of Sir Charles Henry Burtchaell, Director-General Medical Services in France during the war, and Hon. Surgeon to the King.

Dr. Matthew Hay, who died at Aberdeen on July 30th, in his 77th year, had served the city long and faithfully as medical officer of health, and the university as professor of forensic medicine.

WE regret also to record the death on July 28th of Dr. Francis J. Allan, late medical officer of health for the City of Westminster.

THE Medical Research Council have appointed Mr. Ernest Bevin, Dr. C. G. Douglas, F.R.S., and Mr. W. S. Morrison, M.P., to be members of their Industrial Health Research Board in succession to Mr. Arthur Pugh, Prof. E. P. Cathcart, F.R.S., and Major A. G. Church, who retire, by rota, on Sept. 30th.

THE chairman and directors of the Prudential Assurance Company have offered to contribute £1500 a year, for seven years, to the London School of Hygiene and Tropical Medicine. They have suggested—and the suggestion is accepted by the governors—that the contribution shall be directly associated with the university chair of public health, held by the dean of the school as head of the division of public health and industrial hygiene.

PATHOLOGICAL LABORATORY AT EAST HAM.—Hitherto the pathological work of East Ham Memorial Hospital has had to be sent to another institution—last year £721 was spent on 1326 cases—but the former committee room has now been converted into a laboratory at a cost of £430.

ANNOTATIONS

MATERNAL MORTALITY AND MORBIDITY

In June, 1928, Mr. Neville Chamberlain, then Minister of Health, appointed a Departmental Committee to advise upon the application to maternal mortality and morbidity of the medical and surgical knowledge at present available, and to inquire into the needs and direction of further research work. An interim report of this Committee appeared in August, 1930, and was reviewed in our columns,[1] and a final report has now appeared.[2] Sir George Newman has acted throughout as chairman of the Committee, the other members of which are Prof. F. J. Browne, Dame Janet Campbell, Dr. Ethel Cassie, Dr. Leonard Colebrook, Prof. Archibald Donald, Dr. C. E. S. Flemming, Sir Walter Fletcher, Dr. Harold Kerr, Dr. W. H. F. Oxley, Prof. Miles H. Phillips, Dr. C. E. Tangye, and Prof. O. L. V. S. de Wesselow, with Dr. Jane H. Turnbull as secretary. After a brief summary of the scope and general conclusions of the interim report, and the actions arising out of recommendations made therein, the final report deals successively with a further investigation of maternal deaths, further considerations as to a maternity service, statistical points, the maternity services of the Netherlands, Denmark, and Sweden, the high maternal mortality in certain districts of England and Wales, puerperal sepsis, maternal morbidity, the final chapter summarising the facts presented and the recommendations based thereon, which are briefly these:

In every case a registered midwife should be available, to act either as a midwife or as a maternity nurse, and to be responsible for normal midwifery and for routine antenatal supervision on the lines laid down by the Central Midwives Board.

A doctor should be available in every case to carry out antenatal and postnatal examinations, and to attend as may prove necessary during pregnancy, labour, and the puerperium all cases showing any abnormality. It should be the part of the doctor to send cases other than the simplest abnormalities to hospital early.

Maternity hospitals should be staffed in such a way as to secure prompt specialist service for serious cases.

[1] THE LANCET, 1930, ii., 321, 367.
[2] H.M. Stationery Office. 1932. Pp. 156. 2s. 6d.

THE RACIAL EFFECTS OF ALCOHOL

THE effect of alcohol on the individual and on the race is a subject that has often provoked strong statements, but it is also one that has interested many serious students. The first biological investigation was that of Karl Pearson and his school in 1910. It suggested clearly a greater death-rate among children of alcoholic parents, but a superiority among the surviving children. As is usual, the investigations were soon transferred from man to laboratory animals, and perhaps the most important and most widely quoted of all experiments are those of C. R. Stockard, of Cornell University, New York, whose early work with fish and guinea-pigs indicated a deleterious effect on the embryo after exposure of the parent to alcohol. In his first paper he reported a large number of abnormal and unhealthy young. In his later work, however, he emphasised more the beneficial effects of alcohol on the stock, pointing out that the weak embryos were killed off, often at the germ-cell stage, so that the young who eventually survived were decidedly superior when compared with the controls. Raymond Pearl's work on the fowl and E. C. MacDowell's on the rat agreed that the effect of alcohol was reduction in the litter size and in the number of pregnancies, followed by a superiority in the survivors. So convincing were these experiments that in a recent summary of the subject Prof. F. A. E. Crew says:—

> "It is quite unthinkable that any biologist would urge that the garden of humanity should be weeded by the ruthless hand of parental alcoholism. It would be utterly ridiculous, not to say criminal, to suggest that anyone should be a sot for the sake of the race . . . Nevertheless, biology must teach that, if there be excessive drinkers, they may well be indulging, unwittingly, in a eugenic practice."[1]

Soon after Stockard's early papers appeared, the Medical Research Council decided that the matter needed further investigation, and nine years ago instituted research by Miss F. M. Durham and Miss H. M. Woods. This arduous piece of work has now been completed and the report published.[2] The reasons for undertaking the work are given in the preface. Stockard's results appeared to the Council to suggest that alcohol in the circulation can injure the germ plasm and produce a permanent deterioration of the race; these findings, if confirmed, they consider would have implications of the gravest importance for humanity, because not only alcohol but any circulating poison, such as those generated in acute infections, might be expected to cause an injury which would reveal itself only in subsequent generations. Here stress seems to be laid on one side of Prof. Stockard's findings; he concluded also that an individual selection took place through the elimination from the race of the defective and sterile specimens and the evolution of a group of unusually strong specimens, whose offspring show a record superior in vitality.[3]

Concentrating on the suggestion of racial deterioration, the authors of the new report oppose it in a series of conclusions, some of which seem hardly to be justified by the text. Their first conclusion is that there is no evidence that exposure to alcohol causes the production of abnormal young. This is a contradiction of Stockard's first findings, though as early as 1916 he admitted that his later experiments, in which greater care was taken of the animals, did not produce so many abnormalities. Miss Durham's animals were kept according to the very latest methods of care of experimental rodents, and she suggests that Stockard's small litters were due to inadequate supply of green food in the diet, while the abnormalities were the natural result of inheritance. She adds that alcohol may perhaps cause a diminution in breeding-power if the supply of green food is restricted, but has made no experiments on this point. This is an interesting hypothesis, but one without experimental basis qualifying it to cancel the results of many years of experimental work. Stockard claimed a reduction of fertility as a result of alcoholisation; the preface to this report declares that "the litters have been as numerous and as heavy as those from the control matings." Miss Durham believes that "fertility would appear to be unaffected by alcohol," but the

[1] A Review of the Effects of Alcohol on Man. London: Victor Gollancz, Ltd. 1931.
[2] Alcohol and Inheritance: An Experimental Study. By F. M. Durham and H. M. Woods. Medical Research Council, Special Report Series No. 168. H.M. Stationery Office. 1932. Pp. 63. 1s. 3d.
[3] Brit. Med. Jour., 1922, ii., 255.

view wants more explanation, as in one place she speaks of "a greater proportion of guinea-pigs from small litters in the alcoholic series," and holds that "any loss of fertility can be equally well attributed to the genetic qualities of the stock itself." Thus it is not clear whether the litters were or were not smaller in alcoholised stocks. The conclusion in the report is that there was some deterioration in weight in the descendants of alcoholised animals, which might be due to inbreeding, but the authors had no control stock to demonstrate this factor. They found that the longer the parent had been on alcohol the greater the mortality among the young. This might be claimed as a confirmation of Stockard, but the authors ask: "How much of this rise in mortality is due to advancing age it is not possible for us to determine . . . as insufficient control animals of like age were used for breeding." An important part of Stockard's work was to show that in the fourth generation an alcoholised stock was definitely superior to a control stock. The system of breeding relied on for the report was on different lines from that of Stockard, and so the results are not comparable accurately.

BIRTH-HÆMORRHAGE IN THE MEDULLA

IT is well recognised that stillbirth and neonatal death are largely due to impairment of the functions of the medulla, whether such impairment is caused by pressure from above or local injury. Bronson Crothers teaches [1] that the immediate problem in subtentorial trauma is the estimation of the damage to the medulla, and he emphasises the fact that if much blood gets below the tentorium the medulla may be embarrassed. It has frequently been suggested that the immediate cause of death following tentorial tear with subtentorial hæmorrhage is impaction of the medulla in the foramen magnum. The researches of P. Schwartz have diverted attention to some extent from gross external effusions to microscopical intracerebral hæmorrhage, mainly in the subcortical regions and the basal ganglia. The possibility of microscopic lesions occurring in the medulla has received less attention. From the results of an investigation carried out by Dr. F. A. Hemsath and Dr. M. M. Canavan,[2] it would appear that lesions of this kind may be a common cause of death, which may not ensue immediately. The material examined by them consisted of 53 infants, of whom 21 were stillborn, 31 died in the first week, and 1 died of erysipelas on the 22nd day. In 34 of these infants it was possible to demonstrate microscopic hæmorrhages in the medulla, their incidence being equal in the stillborn and in those born alive. The hæmorrhages were present in the four cases in which the Wassermann reaction was positive. In some cases a postnatal cause of death, such as broncho-pneumonia, was also recorded, but the notes do not indicate the extent to which this may have been preceded by respiratory inadequacy. These cases may well have something in common with the series of infants, described by G. F. Still,[3] subject to attacks of sudden cessation of breathing, which could be re-established without difficulty by artificial respiration. The infants were in normal condition between the attacks. In two of the cases which came to autopsy there was evidence of collapse or early inflammation of the lungs, but Still considered that the pulmonary condition was probably secondary to a disturbance arising in the respiratory centres. In 14 of the cases described by Hemsath and Canavan, tentorial tears were found. Ten of these infants had been born alive. In only one of them was there any sign of a pressure cone, whereas in six cases without gross effusions there were microscopic hæmorrhages in the medulla. The authors suggest that lesions of this kind may provide the real explanation of a large number of deaths following tentorial tear. They stress the fact that in 12 of the 53 cases in their series the bulbar lesions supplied an anatomical cause of death which would otherwise have remained obscure. The findings are of considerable interest, and invite further investigations. They raise important questions as to the extent to which bulbar hæmorrhages in the new-born are compatible with survival, and they make obvious the importance—now well recognised—of avoiding all vigorous methods of establishing respiration in asphyxial infants.

[1] Disorders of the Nervous System in Childhood, New York, 1926.
[2] Amer. Jour. Obst. and Gyn., 1932, xxiii., 471.
[3] THE LANCET, 1923, i., 431.

THE PASSAGE OF SPERMS AND EGGS THROUGH THE OVIDUCTS

THE factors which determine the movement of spermatozoa from the vagina into the uterus and Fallopian tube are little understood. In the rabbit the swim-velocity of spermatozoa is 0·05 mm. a second, yet living spermatozoa have been demonstrated 13 mm. within the cavity of the uterus 1 minute 50 seconds after copulation. Computation shows that the swim-velocity would require over four minutes for this distance to be traversed. It is therefore tolerably certain that swim-velocity alone does not explain the migration of spermatozoa from the vagina into the uterus. It is customary to assume that the female orgasm causes spermatozoa to be aspirated into the cervical canal. For human beings this supposition must be put forward with caution in view of the not infrequent cases of pregnancy in which penetration has never occurred and the hymen remains intact. It is difficult to believe that spermatozoa are deposited in such cases in the vicinity of the cervix; and again quite often orgasm on the part of the female is denied. The discrepancy between the animal work and clinical cases is perhaps cleared up by supposing that in normal coitus aspiration is physiological, but that in the cases cited above swim-velocity is the last hope of successful insemination.

The migration of spermatozoa through the cavity of the uterus and along the Fallopian tubes is against the ciliary movement. This is explained by supposing that the ciliary current rotates the spermatozoon so that its delicate tail is washed downwards and the head lies against the stream. The swim-velocity of the sperm is then contrary to the current and it is believed that the ciliary current can be overcome. This ingenious hypothesis has little experimental evidence in its favour. For example, if inanimate matter such as indian ink is injected into a living rabbit Fallopian tube suspended in warm Ringer's solution, the material passes in both directions and is discharged both through the abdominal ostium and the uterine end of the tube. A similar migration in both directions can be demonstrated experimentally if living sperms are injected into the uterus. G. H. Parker,[1] of Harvard University, offers an ingenious explanation for these experimental findings. He points out that local rings of contraction develop

[1] Amer. Jour. Obst. and Gyn., 1932, xxiii., 619.

intermittently in the Fallopian tube of the rabbit, which are not peristaltic in type. As a result, small compartments are formed in which there is a downward ciliary current at the periphery, but as the compartment is closed an axial current in the reverse direction must be produced. Within a short time the particulate matter in each compartment must be transported along the whole length of each compartment. Since the contraction rings arise irregularly along the tube, the migration of the sperms along the whole length of the tube can be explained.

Parker's hypothesis is very ingenious, but it is too mechanistic to be convincing. The migration of sperms through the cavity of the human uterus is not explained, nor is the method by which spermatozoa find the uterine opening of the tube and pass through the interstitial portion of the tube accounted for. Very little, indeed, is known of the life-history of human spermatozoa after they have been deposited in the vagina. The question is of considerable importance for it is linked up with some of the problems of sterility, and knowledge of the survival period of human spermatozoa in the female generative tract may perhaps explain fertile coitus in the post-menstrual phase of the cycle. Any observations on this subject are especially valuable, and should be carefully recorded.

THE METROPOLITAN POLICE IN 1931

THE Commissioner of Police of the Metropolis in his report for the year 1931 (Cmd. 4137, 9*d*.) gives miscellaneous information about administration, recruitment, training, economies, and new developments in motor transport, telephones, and wireless communication for combating crime. The health of the police force seems not to vary greatly from year to year; the daily average loss of personnel due to sickness was a percentage of 3·16 over the whole of the force in 1931, as against 3·02 in 1930 and 3·67 in 1929. Figures are given of admissions to hospitals, of dental treatment, and of bacteriological and X ray examinations. The life has its varied hazards. The total of policemen injured in the year amounted to 2577, but approximately half of these were hurt in accidents of the ordinary kind to which members of the public are equally exposed. Injured policemen placed on the sick list were 864. Of these, 214 were hurt by assaults, &c., in the making of arrests, 80 were hurt while regulating traffic, and 138 by motor vehicles or cycles while not engaged in traffic duty; there were 33 cases of dog-bite, 18 of injury due to stopping runaway horses, and 6 of injury occurring in the restraint of lunatics. In the section of the report which deals with crime, the public is again invited to reduce the number of thefts by not leaving property where thieves can take it easily and with little risk. The suitcase or other portable article left in an open car or on a luggage grid makes larceny a simple matter. The total of 5086 motor-cars reported stolen in 1931 is slightly smaller than that for 1930; 4869 were recovered, "most of them after quite a short period"—we are not told in what condition. The report anticipates good results from the new order as to the locking of parked cars; it hopes that the motor industry will invent some simple device for making it impossible or difficult to prevent unauthorised persons from driving away an open touring car.

The figures of traffic fatalities are slightly lower than in recent years; the 1931 total of traffic deaths is 1326, as against 1398 in 1930 and 1362 in 1929. This total is split into pedestrians (68·3 per cent.), motor and pedal cyclists (22·4 per cent.), and the occupants and drivers of vehicles other than motor and pedal cyclists (9·3 per cent.). Nearly half the pedestrians are killed while "crossing the road without looking carefully." In 7 cases pedestrians committed suicide by throwing themselves under vehicles. Tables are given of the numbers of persons killed and injured in the streets by omnibuses, tramcars, cabs, private motor-cars, motor-cycles, trade vehicles, horse-drawn carriages and ridden horses, and pedal cycles, respectively. Pedal cyclists killed 47 people. Private motor-cars and trade vehicles have the worst record; they killed 419 and 415 persons respectively. Omnibuses killed 146, motor-cycles 220, and tramcars and cabs 30 each. The statistics of non-fatal injuries exhibit quite different proportions as between the various classes of traffic. Out of a total of 54,300 persons injured in the streets, 18,664 were injured by private motor-cars and only 8020 by trade vehicles; pedal cyclists, who injured 8583 persons in 1931, are found to be almost as dangerous as motor cyclists who injured 10,774. Far more persons are killed who are over 60 years of age than children under 15 years, but it must be remembered that young children are probably not so many hours in the streets as older folk. These appalling figures, which have their own significance for the medical practitioners who are summoned to attend the injured, are evidently swollen by dangerous or unskilful driving quite as much as by the carelessness of pedestrian victims. Twenty-eight pedestrians were killed by vehicles mounting the footway or verge of the road, where pedestrians have every right to be and vehicles no right at all. The report expresses the opinion that it is too early as yet to relate the volume of traffic accidents to the Road Traffic Act and the removal of the speed limit. The police, we are told, have instructions to concentrate their attention as far as possible on dangerous driving and other serious offences rather than on the minor and merely technical breaches of the law. Even if good sense did not dictate this policy, some such instructions would inevitably be required in order to economise police time.

YOUNG OFFENDERS, BY ONE OF THEM

THE treatment of the young delinquent is of peculiar importance. Not only is the amount of juvenile crime alarmingly on the increase, but the number of repeated convictions forms a serious criticism of the effectiveness of our methods of dealing with first offenders. Probation has proved of immense value in the hands of discriminating magistrates and the right type of probation officer, but there are many cases and environments for which it is unsuitable. There remains the alternative of a prison sentence or Borstal. Those with knowledge will have little doubt whether a prison sentence is more likely to turn a boy into a self-respecting wage-earner or an habitual offender. The Borstal system represents a serious attempt to train the young delinquent as a member of a self-supporting community and, as it has been the subject of an amount of surprisingly ill-informed criticism, an account of a Borstal institution from within is welcome.[1] Few authors could be better equipped to write on the subject than Mr. Gordon, who has not only served his term in a Borstal institution, or (better) Home Office school, and has experienced the inevitable difficulties in getting work after discharge, but has since had special facilities for learning much of the organisation. He gives a direct account of the life of a boy from the day of his

[1] Borstalians. By J. W. Gordon. London: Martin Hopkinson. Pp. 284. 7*s*. 6*d*.

conviction until after his discharge, and although on the whole a strong advocate of the system he has some thoughtful criticisms of it. Amongst other things, he points out that the whole training is apt to be wasted unless more trouble is taken with after-care, and that with the present attitude of society towards the ex-Borstal boy it may be almost impossible for him to go straight, even when he has every wish to do so. He also appeals for a more enlightened treatment of the sexual offender, and emphasises the undesirability, both from the point of view of the individual and of the community, of sending boy homosexuals and prostitutes to institutions of this type. The author's sincerity and enthusiasm make the book good reading. In this connexion we may allude with satisfaction to the establishment of the newly constituted Institute for the Scientific Treatment of Delinquency. This body proposes to secure coöperation between all movements in criminological work, and hopes to establish centres for adequate diagnosis and treatment.

PERNOCTON IN ECLAMPSIA

ECLAMPSIA remains one of the major problems of obstetrics, and despite improved antenatal care the Registrar-General's returns show that the mortality from this cause has not fallen during the last ten years. The treatments which have been advocated are at least as numerous as the "explanations" of its cause, and since the natural course of the disease is erratic, it is very hard to assess the value of any remedy. It is now generally agreed, however, that forced delivery by any means, including Cæsarean section, is less satisfactory than conservative treatment. The conservative measures are of three main types: those designed to lower the blood pressure, those designed to increase the elimination of waste products, and those designed to secure sleep and quietness by sedative drugs. The last-mentioned form of treatment is most in favour at present, and it is interesting to learn that the Rotunda Hospital, long famous for its eliminative method of treating eclampsia, has now reverted to a previous practice of combining eliminative treatment with large doses of morphine. There is no doubt that morphine in large doses is often effective in stopping the eclamptic fits and in influencing favourably the course of the disease, but there is also some reason to believe that the large doses demanded are in themselves dangerous, and may so embarrass respiration (especially if pulmonary œdema is present) as to precipitate death. Moreover, it is reasonable to suppose that the fœtus, usually premature and already debilitated by the maternal toxæmia, is often born dead because of the baneful influence of the morphine. Were a sedative drug found less dangerous than morphine, but equally efficient in controlling the convulsive tendencies, a great advance would be made. Hence the claims made by Prof. E. Vogt [1] and Dr. H. Frohmann [2] on behalf of Pernocton deserve consideration.

Pernocton is now well known as a barbituric acid derivative which has the advantage of being supplied in ampoules in solution ready for intravenous or intramuscular injection. It has been widely used for a variety of purposes, including analgesia for normal labour, but like other drugs of its class it occasionally causes the patient to become excited and uncontrollable, especially if its effect passes off before the patient is freed from pain. Death from overdosage has also been recorded, though possibly this has sometimes been due to over-quick administration of the drug by the intravenous route. Vogt and Frohmann say that except in the very severe and rapidly developing type of eclampsia—for which they recommend immediate operative delivery—pernocton can be used in every class of case, including post-partum eclampsia. It can also be used with benefit in pre-eclampsia in order to ward off convulsions and to make the dietetic and rest treatment more easy to carry out. The advantages of the drug are its comparative harmlessness even in repeated doses, its almost instant action when given intravenously, and the absence of any inhibitory effect on the uterine contractions. In all of ten recorded cases where the fœtus was viable a live birth was secured, although one child died three hours later. In adequate doses the convulsions are stopped, and by cautious repetition of the doses the patient may be kept quiet for many hours or even days. The combination of pernocton with other sedatives is strongly deprecated, but full use can be made of other lines of therapy such as dietetic treatment. The first pernocton injection, it is advised, should be made under light chloroform anæsthesia. The injection is intravenous, and should be given slowly, at least one minute being taken in the process; this slowness is especially important in severe cases when an overdose may easily be administered. The dose is at the rate of 1 c.cm. to 12·5 kg. of body-weight, but it is varied according to the needs of the case. Subsequent doses are usually of 2 c.cm. and are given intramuscularly.

The cases of eclampsia in which pernocton has been used are as yet comparatively few, and much further experience is needed before its worth can be decided. It is possible, however, that pernocton or some allied drug may have a definite usefulness in the treatment of this condition, especially where a live birth is anxiously looked for. Sodium amytal, another barbiturate, has apparently given good results in a few cases.[3]

[1] Münch. med. Woch., 1932, lxxix., 825.
[2] Deut. med. Woch., 1932, lviii., 816.
[3] Amer. Jour. Obst. and Gyn., 1932, xxiii., 592.

THE WILLIAM WITHERING LECTURES

Mr. C. J. Bond is publishing the five lectures on Certain Aspects of Human Biology, delivered earlier this year at the University of Birmingham. Lectures IV. and V. in this course, describing the results of an inquiry into certain aspects of the physiology of the red blood-cell, are appearing separately.[4] On washing human red cells free of serum and suspending them in saline, many of them assume a crenated or, as the author calls it, a "prickled" appearance; in hanging drop preparations the onset of this change may be delayed or prevented by greasing the cover slip; its appearance is hastened by the addition of pyridine to the suspension. On resuspending in serum the cells assume their normal shape or, in the author's words, are "deprickled." Numerous observations are reported of various substances which will prickle red cells and of others which will deprickle prickled cells. It is the belief of the author that the comparative study of these phenomena in the human species and other animals would throw light on questions of racial and evolutionary kinship. The remaining three lectures, which will be published later, deal with neuropsychic and other responses, and the relation of genetics to the preventive medicine of the future.

[4] London: H. K. Lewis and Co., Ltd., 1932. Pp. 57. 2s. 6d.

SPECIAL ARTICLES

WHAT IS WRONG WITH THE MEDICAL CURRICULUM?

(A Series of Opinions Contributed by Request)

IX

BY T. IZOD BENNETT, M.D., F.R.C.P.

DEAN OF THE MEDICAL SCHOOL, MIDDLESEX HOSPITAL; LATE BEIT MEMORIAL FELLOW FOR MEDICAL RESEARCH

IT might reasonably be argued that the principle difficulty of the present medical curriculum is that the length of time necessary for carrying out the requirements of the educational authorities is such that an impossible economic burden is placed upon many students. Anyone who has the advancement of medical science at heart must feel that this economic stress deprives us of many students of very high intelligence, and diverts them to other occupations where their ability is often wasted. A somewhat desperate problem is constantly confronting us; on the one hand the advance of knowledge calls for an increase in the period of education, and, on the other hand, the cost of education calls for a diminution in the time demanded from the student.

If one sits down with pencil and paper and makes a rough calculation of the cost of medical education, including examination fees and books, and adds to this the cost of supporting a student during five or six years after leaving school, one cannot but admire the fortitude of parents who encourage such an undertaking. If the calculator will proceed to contemplate the hours of arduous work which confront the student, the strain upon his health which is involved, and the hazards which imperil his ultimate success, the philosophy and good humour of the medical student must give rise to admiration, particularly when these are contrasted with the grumbling and discontent which seem to prevail in the junior ranks of other professions.

The regulations concerning medical education made by the General Medical Council must be framed, first and foremost, with a view to ensuring that the public is served by general practitioners of a certain minimum standard of technical ability. The various examining and educational bodies are confronted by a more complex problem, in that they must decide whether to cater for this minimum requirement or whether they must endeavour to produce men competent to advance medical science and carry out duties of a much higher technical standard. I take it, however, that the present discussion is chiefly concerned with discovering whether any improvement can be brought about calculated to produce a better trained medical man in the minimum time available. Are we making the best use of the time given to us?

At present there are four sets of examinations to be passed before qualification. In my opinion the possibility for improvement lies chiefly in the training for the earlier of these examinations, and the hope of producing a higher category of qualified medical men is to be found by modifying these preliminary standards.

1. THE PRELIMINARY EXAMINATION

Without broaching the controversy between classical and "modern" education, it is surely indisputable that the medical student who has had training sufficient to enable him to read modern French, German, and a third foreign language, has an advantage over his fellows which, should he show any real ability for medicine, will be of enormous value to him throughout his career. I find it impossible to believe that it would not be easy for those in charge of our public schools to give their pupils this instruction, and I think it would be more than reasonable if the General Medical Council were to insist that every student, before registration, should have passed an examination guaranteeing his competence to read French, German, and one other foreign language. A much higher standard than this is demanded in many continental medical schools, but the capacity to read is all that is really essential, and it is acquired much more easily than any great knowledge of grammar or facility in pronunciation.

From the utilitarian point of view it seems to me that the preliminary educational necessities for the medical student are:

(*a*) A knowledge of English sufficient to enable him to write his own language with some facility and correctitude;
(*b*) A knowledge of mathematics sufficient to enable him to assimilate physics and chemistry; and
(*c*) A knowledge of written modern language of the standard set out above.

It is undoubtedly useful for a student to know enough Latin to understand the meaning of certain scientific terms, but it may be assumed that such knowledge will be acquired in reaching the standard of English indicated above.

The universities will certainly demand a much higher standard of general education than this, but whatever they may decide in this respect I feel it highly desirable that in no circumstances should it be possible for a boy or girl to become a medical student without possessing such a moderate knowledge of modern languages. The policy of permitting brilliant scholars to secure exemption from the qualifying examinations for the various universities by passing the examination for the higher certificate in two subjects only, is no doubt an excellent one from many points of view, but it remains desirable that the future medical student shall begin his work with sufficient instruction in the subjects I have mentioned, in order to enable him to escape grave handicap when it becomes necessary for him to study the literature of his chosen profession.

2. THE PRE-MEDICAL EXAMINATION

This examination, which usually consists of chemistry, physics, and biology, can now be taken by a pupil whilst he is still at school. Advantage is often taken of this in order to shorten the subsequent period at a medical school. The value of this examination in giving the medical student a general grounding in science is undoubted.

I do not think that very much would be gained, or lost, by such minor changes as the omission of botany from the syllabus, although this science bears very little relation to medical science to-day. On the other hand, there is a general feeling that the standard achieved by pupils who are taught these subjects at school is usually considerably below that of those who pass their first 12 months in a medical school. Much more important, in my opinion, is the fact that one of these subjects, chemistry, is the basis on which much of the student's future capacity to advance the science of medicine must depend. But it is to be noted that organic chemistry and physical chemistry, rather than inorganic chemistry, are the two branches in which knowledge is required,

and they are branches which occupy a secondary place in our present curriculum. I feel that a great deal might be gained by making the pre-medical examination such that it could be reasonably passed from school by an intelligent pupil, whilst organic chemistry and physical chemistry should be actively pursued in the period immediately following, and should be much more thoroughly taught in the medical schools, and harmonised and correlated with the teaching of biochemistry, both in its physiological and pathological applications. It would not be in any way difficult to continue this instruction throughout the period when the student is engaged in the study of anatomy and physiology.

3. THE FIRST PROFESSIONAL OR PRE-CLINICAL EXAMINATION

It is often argued that an unnecessarily high standard of knowledge is required in anatomy; I doubt whether this is the case; at any rate, the ordinary student manages to pass his examinations without undue strain. In the teaching of physiology I believe that there has been a great improvement during the last decade, and the present tendency to study the functions of the healthy human body rather than the intricacies of the phenomena of life in lower animals, is very welcome. There is a movement in many medical schools towards bringing the student more in touch with his future work at this stage. Demonstrations are given on selected cases showing the applications of physiological knowledge to disease. All with experience of this are agreed that it is of benefit in encouraging enthusiasm amongst students, and it is also of value in counteracting any possible tendency amongst teachers to concentrate on purely academic aspects of biology. It is perhaps desirable that applied physiology of this type should become a regular part of the curriculum.

I have already discussed the desirability of including organic chemistry and physical chemistry in this section of the student's work.

4. THE CLINICAL PERIOD AND FINAL EXAMINATION

The problem of the final examinations seems to me to be more what to exclude than what to add. There has been a healthy tendency in recent years to replace compulsory lectures by clinical lectures and practical demonstrations. In many of the London medical schools routine lectures in medicine and surgery have been abolished. There has, on the other hand, been a tightening up of the course of work prescribed, so that students attend for regular periods in all departments, including not only the major specialties but departments such as those for X ray diagnosis and radiotherapy. There is, I believe, a general agreement, at any rate in the London medical schools, that the general standard of medical education has thereby been improved. In contrast to this are the demands received almost weekly, by those in authority in medical schools, for enforced instruction in all manner of subjects ranging from inhalation therapy to the study of parasitic worms. A recent article by the Dean of St. Mary's Hospital Medical School emphasised the danger of such propaganda. It is to be hoped that the General Medical Council and the examining bodies will not permit themselves hastily to be persuaded to make compulsory lectures on such subjects a necessary part of medical education.

Let us have students capable of writing their own language fluently. Let us have students eager for knowledge, and possessing the capacity for reading a reasonable number of foreign languages. Let us have students capable of following with intelligence the future advances of chemistry and physics. Let us have students with a real working knowledge of organic and physical chemistry. Given these things, I believe the medical schools can be entrusted to teach the functions of the human body in health and the phenomena of disease, and further to stimulate enthusiasm amongst their students and to produce practitioners of high standard, together with a proportion of men and women capable of carrying on the great traditions of our country as regards the furtherance of medical science.

HIGHER EXAMINATIONS

I have purposely limited my comments to medical education designed for the training of practitioners. I believe that it is quite possible on the lines I have indicated to give a student sufficient grounding to permit him, if he shows unusual ability, to continue his education and to begin useful work on medical research or to qualify as a teacher of medicine or surgery. At the same time, a more extensive knowledge of biology, chemistry, physics, physiology, and anatomy will clearly be of incalculable value to him if he is going to occupy one of the higher ranks in our profession.

The older universities have recently been engaged in devising plans whereby the additional time given by their undergraduates to the pre-clinical subjects may be better employed. The increasing number of candidates who work for the primary examination for the diploma of F.R.C.S. is an indication that there is no lack of students desirous of achieving a higher standard in these pre-clinical subjects. It would seem desirable that there should be more coördinated system for such candidates, and particularly that the passing of such an examination as the primary F.R.C.S. should entail study in the laboratories and class-rooms rather than book work alone.

It is doubtful whether the high standard which competition for this diploma has created really leads to a genuine improvement in education amongst the successful candidates. Much of what they have learnt by such concentrated effort they forget with deplorable rapidity. If the Royal Colleges were to institute a conjoint primary examination, for which 12 months' extra study in the anatomy theatres and physiological laboratories was a qualifying condition, I am sure that a great many medical students would work for this extra period, and so would enter upon the study for the clinical period with a genuinely better education in these subjects than they possess at present.

NORTH OF ENGLAND HOSPITALS.—Last week Sir John Priestman, in opening the new Monkwearmouth and Southwick Hospital at Sunderland, stated that he was giving £50,000 towards its maintenance—he had already subscribed £15,000. The hospital has cost £110,000, but owing to the industrial depression in the area only one-half of the wards can at present be put into use. There are 104 beds. Each self-contained ward-unit contains one large ward of 16 beds and two wards of two beds; the children's ward has 22 cots and isolation wards.—When Boundary Park poor-law hospital at Bolton was taken over by the town council the Ministry of Health pointed out that the medical and nursing staffs were insufficient. The former was increased, but it was impossible to make better provision for nursing until more domestic accommodation had been built. This has now been provided, and the new buildings were opened last week.—Lord Bolton has formally opened extensions and modernisations of the Rutson Hospital, Northallerton.—The foundation-stone has recently been laid at Lancaster of a joint infectious diseases hospital which is to serve Lancaster, Morecambe, Heysham, the urban district of Carnforth, and the surrounding rural area. The hospital, which will cost £60,000, will have 56 beds in two ward blocks and two cubicle blocks, with provision for extension.

BRITISH MEDICAL ASSOCIATION

CENTENARY MEETING IN LONDON

SECTION OF MEDICINE

AT the first meeting of this section, held on July 27th, Sir HUMPHRY ROLLESTON presided, and Prof. EDWARD MELLANBY (Sheffield) opened a discussion on the clinical application of the

Recent Work on Bone Disease

Advances in knowledge of this subject, he said, had come along two main lines of investigation—namely, the study of diet and environment, and the study of the parathyroid glands. The relationship of these two factors had so far evaded discovery. The structure of normal bone was the outcome of a struggle between two influences, one tending to produce perfect formation and calcification with deposition in the matrix of a compound made up largely of calcium phosphate, the other tending to prevent the adequate deposition of this compound. The factors assisting perfect calcification were (1) adequate supplies of calcium and phosphorus; and (2) an adequate supply of vitamin D, either in the food or as synthesised in the body by the exposure of the skin to sunlight or some other source of ultra-violet radiation. Those preventing normal calcification were (1) substances which induce growth without supplying a corresponding calcifying substance; (2) foods which not only encourage growth but actually, by interfering with the retention of calcium salts, prevent deposition of calcium in the bone matrix. Milk, cheese, butter, egg-yolk, and the fat of meat and fish were foods that favoured calcification through their content of calcium and vitamin D, or both, while cereals hindered calcification. Lean meat and vegetable fats, through their effect on growth, had a secondary influence. He concluded, therefore, that the demand for the inclusion of calcifying foods in the diet was greatest during the period of growth and when cereals were the main constituent of the diet.

Rickets, late rickets, and osteomalacia he described as due to defective feeding. Gross bony deformities were more rarely seen in adults than in children, partly because of the relatively small rate of growth, and partly because of some unknown factor which insured greater skeletal stability, except in countries where the diet was greatly restricted and largely composed of cereals. Rickets he considered to be one of the greatest social evils of the day, especially in the north. No fewer than 500 children were attending a rickets clinic in Sheffield alone. Apart from gross deformity, he instanced May Mellanby's observation that only 1·3 per cent. of children under six in a large series had perfectly formed sets of teeth, as evidence of the widespread effects of deficient feeding upon calcification.

Prof. Mellanby expressed his belief that rickets could be prevented by increasing the consumption of milk, and by breast-feeding if mothers were properly fed; if necessary, additions to the diet of substances rich in vitamin D, both for infants, children, and nursing mothers, could be given. Small doses of cod-liver oil he considered the best preventive and curative agent, the actual dose varying with the amount of cereal ingested. No child under eight or nine months should take any cereal, and only small amounts should be taken for the first two years; cereals could be replaced by milk, eggs, cheese, and fruit, and butter made more antirachitic by the addition of 10 per cent. calcium phosphate or carbonate. Among poor people whose cereal consumption was necessarily high, he thought, an effort should be made to increase the calcium intake as by giving 2 g. of calcium phosphate (bone ash) daily.

Both late rickets and osteomalacia, Prof. Mellanby said, could be cured by giving vitamin D, though probably these conditions were produced only when there was a deficiency both of calcium and vitamin, due either to deficient intake or to increased demand as in pregnancy. The rather paradoxical fact that osteomalacia was common in countries with abundant sunlight he thought might be explained by the fact that the diet was largely cereal. He had known of two cases in this country produced in women by restriction of diet because of dyspepsia.

In discussing the use of vitamin D preparations, he emphasised the danger of hypervitaminosis when using the most potent forms, especially in treating marasmic children not taking a reasonable diet. 20 c.cm. of cod-liver oil containing 2000–3000 units of vitamin D he considered sufficient to cure rickets under ordinary dietetic conditions.

Analysing the influence of the parathyroid gland on bone structure, Prof. Mellanby briefly mentioned how recent work had shown that generalised osteitis fibrosa was associated with hyperplasia of one or more parathyroid glands and specific changes in the level of blood calcium and phosphorus and increased output of calcium, while in localised osteitis fibrosa no such changes are found. Ignorance of the ætiology of osteitis deformans or Paget's disease was, he said, the greatest hiatus in our knowledge of bone defect. He had treated some cases successfully by a high calcifying diet.

Renal rickets he thought fell into the same group, as due to some derangement of the functional activity of an organ—in this case the kidney—rather than to faulty diet, and had no relation to ordinary infantile rickets. He believed there was some experimental evidence to suggest that the kidneys and parathyroid glands were closely related in their actions.

CŒLIAC DISEASE

Prof. L. G. PARSONS (Birmingham) said that the outstanding feature of cœliac rickets was inability to absorb fat and the consequent loss of large quantities of calcium as calcium soaps in the stools, associated with defective absorption of vitamin D. Rickets in association with cœliac disease was, he thought, most commonly recognised between the ages of 5 and 7 years—i.e., during the second growth period—since during the first growth period, up to 9 months old, it was difficult to diagnose cœliac disease, even if present. He thought that the radiographic appearances in early cœliac rickets did not differ from those of early infantile rickets except that possibly osteoporosis was more marked, but that as the disease developed, stunting or complete arrest of growth might occur, leaving a fragile atrophic osteoporotic bone. He had never seen early rickets followed by late rickets in the same child, and believed that late rickets only developed as the result of inefficient treatment. The blood calcium, he said, was low and the blood phosphorus, though variable, tended to be diminished. He emphasised the dangers of relying on a fat-free diet only in treatment. Ultra-violet light and vitamin D, in some form other than cod-liver oil, should also be given. He had recently had satisfactory results from irradiated yeast preparations.

Dr. T. IZOD BENNETT (Middlesex Hospital) summarised investigations on a series of cases of adult cœliac disease or idiopathic steatorrhœa, made in collaboration with Dr. Donald Hunter and Dr. Janet Vaughan.

The majority of cases, he said, gave a history dating from early childhood and were therefore probably examples of cœliac disease. They had all been born in Great Britain. The outstanding symptoms he described as steatorrhœa (sometimes associated with diarrhœa), various types of anæmia, tetany, and infantilism associated with bony changes. The stools, he said, might be normal both in number and appearance, but analysis showed at least 50 per cent. of total fat in the dried fæces with normal proportion of split fat. Megacolon was a frequent finding. The anæmia if present they had found of three types: (1) a hypochromic anæmia which responded to iron; (2) a megalocytic hyperchromic anæmia which responded to Marmite; (3) an erythroblastic anæmia characterised by megalocytosis, low colour-index, and many normoblasts—also responsive to iron. All cases had shown lowering of blood calcium, while the calcium content of the urine was low and that in fæces high. Radiography of the bones, he said, showed severe osteoporosis, while histological examination demonstrated the presence of osteomalacia. Studies of the metabolism of these patients from every aspect suggested to him that failure to absorb essential substances from the gastro-intestinal canal rather than any endocrine disturbance was the underlying cause of the remarkable clinical picture.

RENAL RICKETS, SCURVY, AND GENERALISED OSTEITIS FIBROSA

Dr. HUGH BARBER (Derby) described renal rickets as a slowly progressive kidney disease developing early in life. In the majority of cases, he said, the morbid anatomy was that of a primary interstitial nephritis of a small white kidney type with an extreme degree of interstitial change. Rickety changes were also known to occur in interstitial nephritis secondary to acute glomerular nephritis and in bilateral cystic kidney disease. Thirst and polyuria associated with general lack of development, occurring between 5 and 8 years old, he considered the first symptoms. Bone changes of a rickety nature, the most common being genu valgum, he had found occurred at about the age of 10, and death from uræmia between 14 and 18 years. The evidence of interstitial nephritis was slight; but the low specific gravity urine, with an occasional trace of albumin and rising blood-urea, he thought characteristic.

Prof. H. A. HARRIS (University College), describing the bone changes in scurvy, said that subperiosteal hæmorrhage was far more common in the juvenile than in the adult form. Discussing the differential diagnosis from rickets, he said that in scurvy denser calcification was seen at the end of the bones and that there were characteristic window-like spaces apparent in radiograms. Further, the bone-marrow was affected to a greater extent in scurvy, so that anæmia was a more marked feature. He emphasised that the finding of a circle in the radiogram of an epiphysis was evidence of arrested growth, and not, as was often thought, diagnostic of scurvy; such arrested growth might be due to an acute infection. He discussed the radiographic findings in syphilitic epiphysitis, and warned the meeting that he had never seen normal bone in supposedly normal animals raised in the laboratory.

Dr. DONALD HUNTER (London Hospital), discussing generalised osteitis fibrosa, described Collip's experiments on parathyroidectomised dogs. Clinically, he said, he had found high blood calcium, increased calcium output, and the bone picture of generalised osteitis fibrosa in association with parathyroid tumours. Removal of the tumour, which on section showed only hyperplasia of normal gland tissue, had led to a return to normal of the blood chemistry, disappearance of bone pain and thirst, and gradual increase in density of the bones as evidenced by control radiograms. The bone from such cases showed excessive lacunar resorption by osteoclasts, similar to that found in focal osteitis fibrosa where, however, there was no evidence of parathyroid hyperplasia and normal calcium metabolism.

Mrs. MAY MELLANBY emphasised the importance of early care of the teeth to prevent caries.

Prof. H. D. KAY (Toronto) thought that phosphorus metabolism was as important as that of calcium, and wondered whether the intestinal factor in bone disease should not receive more attention. It had been possible, he said, to produce rickets in rats on a normal diet with adequate vitamin D, where intestinal absorption of phosphorus had been deficient.

Dr. ROBERT HUTCHISON (London) said the symposium had shown that there were two main groups of bone disease: (1) bone disease proper, as osteitis fibrosa; (2) bone disease secondary to other conditions, as failure of gastro-intestinal function seen in cœliac rickets.

Prof. J. B. COLLIP (Montreal) described recent experiments that showed that parathormone was capable of stimulating osteoblastic activity.

Prof. MELLANBY closed the discussion.

SECTION OF PHYSIOLOGY AND BIOCHEMISTRY

IN his presidential address Sir HENRY DALE said it was fitting that the Section of Physiology should turn aside from the advancement of physiology as a science to consider its relation to the practice of medicine, and its proper part in the training of doctors.

Relation of Physiology to Medicine

Physiology, together with the whole of experimental medicine, began, he said, with the work of a physician, William Harvey, and was not regarded as a separate science until late in the nineteenth century. Until Michael Foster went to Cambridge in 1870, the only teaching of physiology in that university was given by the professors of medicine and surgery. Foster had been a pupil and assistant of William Sharpey, professor of physiology in University College, London, a centre to which British physiology could trace so much of its origin through Foster, Burdon-Sanderson, and their successors. Through the schools which thus arose British physiology entered upon a development which had started a generation earlier in France and Germany, under such leaders as Claude Bernard and Carl Ludwig. Of such cleavage physiology provided, of course, only one example among many. It was a phenomenon common to science as a whole, and was most active at the points of rapid growth, of which it was the inevitable consequence. Each new specialisation involved, for a group of investigators, some narrowing of scope and interest and risked for them the loss of fertilising contacts. That, however, was the price paid for progress and it was rational not to obstruct its advance, but to keep the price as low as possible.

The inevitable increase of physiological inquiry independent of medicine produced in different observers reactions which varied with personal experience and interest. It might well be that Lord Moynihan, who twice in recent years had deplored the "truancy" of physiology from medicine and surgery, gave expression to an opinion held by

many. The attitude was one which physiologists must recognise and consider with respect, but their response to it would largely be determined by their interpretation of its meaning. Fuller coöperation was still a pressing need in the interests of physiology itself, as well as in those of medicine and surgery, though it was unnecessary to assume that the defect was either new or increasing.

Sir Henry Dale selected two examples of the value to medicine of the relative independence of physiology.

DISCOVERY OF INSULIN

Diabetes was discovered by clinical observation some centuries before the clue to its nature was obtained as the chance result of an experimental investigation undertaken for a widely different purpose. Von Mering, being interested in the physiology of the digestion and absorption of fat, asked his assistant, Minkowski, to attempt the complete removal of a dog's pancreas. The operation had the unexpected result of producing great hunger and thirst and the output of large volumes of urine loaded with glucose. Minkowski proved that the condition was practically identical with the diabetes mellitus of man.

It was obvious that this recognition involved a knowledge, built up by many years of clinical observation, of the main characters of diabetes in man. But could anyone suppose that physiological experiment undertaken with the particular object of finding the cause of diabetes, and taking its clues and directions entirely from the wards, would have been likely to lead even to a suspicion that the pancreas was concerned?

Further progress had depended on knowledge drawn from the general body of experimental physiology and biochemistry. The production of artificial pancreatic grafts showed that the influence of the pancreas on carbohydrate metabolism was due to an internal secretion from a part of the pancreas not concerned in forming the digestive juice. Then followed successive attempts to prepare the hormone in stable form for artificial administration. Many failed, but Sir Henry thought that some would have succeeded if their authors had only been able to use the means for recognising success. Biochemistry had to find good methods for the rapid estimation of glucose in small samples of blood, for example, before the testing of pancreatic extracts became a practical possibility. To say that success represented the well-placed top-stone on a structure of which Minkowski had laid the foundation, and which had steadily risen by the labours of others too numerous to mention, was not to weaken, but greatly to enhance, the credit due to the Toronto workers. It meant that their discovery effected a sound advance, of immense scientific as well as practical importance, on one of the main fronts of experimental physiology, and was not merely the result of a chance throw.

SURGERY OF SYMPATHETIC NERVOUS SYSTEM

Surgery had been extended relatively recently to the sympathetic system. It might have been supposed that there were very few fields in which physiology could more justly claim to have provided a great body of detailed and exact knowledge for the use of surgery and medicine, as soon as these should have sufficiently advanced in the refinement of diagnostic analysis and of operative technique for practical application in human disease. From Claude Bernard's first demonstration of the vasomotor function of the cervical sympathetic nerve, through the work of Ludwig's school, and later and most conspicuously through that of the Cambridge School of Physiology—Gaskell, Langley, and Anderson—down to the present day, there had been no more absorbing subject than that of the varied functions of the autonomic nerves in controlling the activities of the involuntary muscle coats and gland cells of the different organs of the body. Little, if any, of this work was undertaken with a direct view to its medical or surgical application.

PHYSIOLOGISTS AND THE STUDY OF PHYSIOLOGY OF MAN

Sir Henry found no reason to suppose that physiologists in general had diminished their concern with the physiology of man. He thought there were clear signs, indeed, of a definite tendency in the opposite direction. It would be unsafe, he said, to found a general conclusion on individual examples, but it was difficult not to find some significance in the contrast between a Burdon-Sanderson, in an earlier generation, coming into physiology from medical practice and devoting the remainder of his active career to an academic study of the electrical reactions of cold-blooded organs, and a worker like A. V. Hill, in our own time, coming into physiology from physical chemistry and mathematics, and applying, in direct investigations on human muscular activity, the knowledge gained by earlier study of the energetics of isolated frog's muscle. Dr. Douglas would no doubt make mention of the great body of investigation on human physiology which had grown up in Oxford round John Haldane, with an influence spreading not only to every centre of physiological research, but to every progressive clinic in the world. These were merely two out of many possible examples which could be cited against the suggestion of a growing neglect of human physiology. He did not think that there was any reason to believe that lack of direct physiological experiment on man had been responsible for widening the gap between medicine and physiology, or, indeed, that the relation of human physiology to medicine must of necessity be closer, or of greater practical importance, than that of much experimental work which, from its very nature, could not be carried out on man.

The present century had seen a remarkable revolution in practice which had largely transferred the initiative, in the discovery of new methods of diagnosis and treatment, from the wards to the laboratories. To mention only a few items: the use with X rays of substances rendering organs artificially opaque to them; methods of measuring metabolism and respiratory exchange; methods of micro-analysis for the various constituents of the blood; the conception of endocrine deficiencies and the use of extracted hormones to replace them; vitamins, and their relations to the causes and treatment of diseases; salvarsan and other agents of specific chemotherapy; serums, vaccines, and the whole apparatus of active and passive immunity; these and innumerable others had been direct gifts of the laboratories.

Sir Henry Dale thought that physiological discovery was soon utilised in the laboratories, and that the results were quickly applied in medicine. The danger lay in the tendency for medicine and surgery to regard experimental research as the function of physiology and pathology, and the acceptance and application of its results as the function of medicine and surgery. He felt that full advantage should be taken of all general scientific progress, including physiology, but that medicine and surgery should also create their own methods, and use them in developing an independent and progressive experimental science. Thus

they would use what physiology could offer, and give to physiology what it required for its own development.

The teacher had to present physiology to the medical student as part of the foundation for his study of practical medicine and for his life's work. The student should be trained to observe, to think, and to form a reasoned judgment. Physiology, rightly presented, was pre-eminently fitted for training in accurate observation, in the meaning of quantity and measurement, in the putting of questions to nature and the appraisement of answers obtained. Physical and chemical data had to be interpreted in relation to the special uncertainties and complexities imposed by the nature of a living organism. Sir Henry felt that the subject was of great educational value, and that this educational aspect must be remembered first, when a revision of teaching was undertaken to lighten the burden of the medical curriculum.

DISCUSSION

Sir THOMAS LEWIS confined his remarks to research work. Both physiologists and clinicians were well aware of the services rendered to medicine by physiology. For many years he had had intimate contact with both subjects, but on this occasion he wished to speak mainly from the point of view of clinical medicine. He felt that there was a pressing need for clinical medicine to take its proper place as a progressive science on an equal footing with physiology. Further he was confident of the generous support of physiologists in this attitude. Clinical medicine drew inspiration from physiology, and physiology from clinical medicine. Clinical workers, in their search for explanations of abnormal phenomena often contributed to physiological knowledge, and a large proportion of physiological work was directly or indirectly suggested by clinical problems. Harvey had been called the father of physiology, but Harvey was a physician. His work was based in large part upon experiments carried out upon the human being, the first object of research to which a physician naturally turned. It was important for young men of ability to realise that the clinical field of work was most fruitful, and important to the welfare of physiology that clinical medicine should be strong.

A statement that medicine was founded upon physiology represented only a partial truth. Clinical progress was achieved mainly in three ways, in the identification of disease and the study of its natural history, in experimental work on clinical cases, and in the application of physiology. The method used in the discovery of disease was chiefly observational; it was a vital step, because no studies could be made until the subject for study had been defined. Thus the action of digitalis in cardiac irregularity, the life-history of rheumatic fever, the identification of subacute bacterial endocarditis and of coronary thrombosis, and even the recognition of hypertension in man and its consequences, were all clinical discoveries, and would probably have been made in the same form had there been no contemporary physiology.

When the experimental method was added to the observational method, it must open up new channels of progress. The two methods were of course closely interwoven. The experimental method was not confined to the laboratory, and was by no means new to medicine. Many physical signs elicited in the wards were won by experiment. Such experiments should be extended and, wherever possible, should be controlled just as they were in a physiological laboratory. Only clinicians could undertake this work, because they alone could judge how far experiment was consistent with the complete welfare of the patient.

By applying physiological principles to the study, disease could be interpreted in terms of altered function. Medicine was thereby profoundly influenced, in that there was a great gain to accuracy of thought. Practically all medical "discoveries" consisted of a chain of events, of which some of the links were physiological, some were clinical. The first step, which was the recognition of the human need, and the last step, which was the application of a test directly to man, must of necessity both be clinical. Sir Thomas Lewis concluded that clinical science urgently needed suitable whole-time posts in clinical research, and a group of well-trained workers who were prepared to devote their lives to the study of disease.

Dr. C. G. DOUGLAS (Oxford), in teaching medical students, encouraged the closest relationship between physiology and medicine. The study of normal man was essential to both subjects. In his opinion human physiology should be incorporated more extensively in the practical teaching of medical students; he had found it the best means of arousing their interest in the subject as a whole. During the last few years he had noted that his medical students tended to become bored by physiology which was not immediately applicable to medicine, though he was puzzled how they divined, at so early a stage, what would be applicable. Perhaps the text-books of physiology were to blame, in that they tended to record a series of isolated facts, instead of coördinating them so as to illustrate the importance of the factor under consideration upon the working of the animal body as a whole. At the same time he did not underrate the importance of other branches of physiology, and was fully alive to their educational value and their importance in imparting to the student a proper "scientific attitude." "Normal" was after all a relative term. Thus, the polycythæmia of high altitudes was "normal." By learning in physiology the compensatory changes which resulted in health from a diminished tension of oxygen at high altitudes, the student was able to appreciate in medicine the compensatory changes which resulted from a diminished oxygen tension due to disease. The physician had to start from a very uncertain base line—"the normal range"—and must often be in difficulty in deciding where the normal ended, and where the earliest pathological changes started.

Dr. J. A. RYLE (Guy's) admitted that a large part of the physician's work must be observational in character, but he thought there was a danger that "observational" should be regarded as synonymous with "descriptive." A physician's work was much like that of a modern biologist; not merely the description of what he observed was necessary, but also such questions as the functional interpretation, the ecology, the psychology, and so on, of observed signs and symptoms must engage his mind. Dr. Ryle felt there was a need of further physiological research into subjective sensations, and into the question of predisposition or diathesis, a subject in which he had become interested as a result of his observations with Dr. Izod Bennett on the gastric secretion of a hundred normal students. As a teacher, Dr. Ryle particularly encouraged the student to observe; he had the impression that with the present necessity for the student of physiology to acquire so much technical information, there was a danger of the training of the power of observation to be relatively neglected. Both the past and the present discussions had shown that physiological

and medical teachers alike were anxious jointly to undertake the most interesting "experiment" of all, the education of the medical student.

Dr. F. R. WINTON (Cambridge) felt that the cleavage between pure and applied physiology had now gone so far that possibly the time was ripe for the consideration of a similar cleavage in the teaching of physiology to undergraduates. Alternative courses might be provided; the one might be mainly technical in character to cover the requirements of medicine; the other might be broader, and of a university standard, to act as a biological education. Though reform of the medical curriculum must include the teaching of physiology, it must be remembered that physiology was but a small fraction of the whole problem. Really a gigantic revision was required, in fact nothing short of a "disarmament conference."

In the subsequent general discussion a number of points were raised or answered by Prof. F. VOLHARD (Frankfort), Sir CHARLES SHERRINGTON, Prof. H. E. ROAF, Prof. SAMSON WRIGHT, Prof. W. H. WILSON (Cairo), and Dr. G. W. PICKERING. Dr. E. P. POULTON submitted that there was much to be said for awarding a relatively substantial research grant initially, which in subsequent years should be *decreased* as the recipient found and followed his natural bent as teacher or clinician, or took up a definite research post.

SECTION OF OBSTETRICS AND GYNÆCOLOGY

AT a meeting of the Section of Obstetrics and Gynæcology of the British Medical Association on July 27th, with Mr. COMYNS BERKELEY, the President, in the chair, a discussion on the

Indications for Induction of Abortion

was opened by Prof. BECKWITH WHITEHOUSE (Birmingham). By abortion, he said, he meant the expulsion of the developing ovum at a time before the fœtus was considered to be viable, and the induction of abortion, therefore, implied the sacrifice of a potential individual. In this country the birth-rate was falling owing to a lower marriage-rate, the widespread promulgation of contraceptive practices, and the combined economic factors of unemployment and high taxation. In sexual matters the general public was being influenced by current practices in Europe, and it was sometimes stated that if a person knew the way about there was no need to go abroad to obtain abortion; the necessary medical indication would be found. In this matter of abortion the medical profession had a great responsibility and it was not necessarily their duty to acquiesce in any policy actuated by the social life of the times, if they believed it to be detrimental to the nation's well-being. There was an appreciable risk in emptying the uterus of the products of conception. In Russia it was claimed that thousands of abortions were procured annually without complications. Abortions were procured in Germany with Heiser pastes and ointments; Engelmann, however, had recorded five deaths in the last year from abortion procured by this method. In Great Britain abortion was not notifiable, and it was difficult to obtain reliable statistics of its incidence. The time seemed opportune to consider the need for a system of notification and registration of abortions. He had analysed the incidence of abortions among 3000 hospital and private patients, and had found the ratio of abortions to births to be 1 to 4·7. He did not believe that the practice of illegal abortion was increasing in this country to the extent that some people supposed Contraceptive measures were one factor in lowering the incidence of abortion. There was no doubt that pregnancy was being terminated nowadays for indications which would not have been considered 25 years ago, that was to say, for reasons which had no relation to preserving the life of the mother but which were justified on the grounds that her health would be impaired if pregnancy continued. There was at present no legal mandate to perform such operations. The major indications for abortion had been summarised as follows: (1) the toxæmias of pregnancy; (2) chronic diseases aggravated by pregnancy (diabetes, nephritis, tuberculosis, heart disease, malnutrition, mental and nervous states); (3) obstruction. Mr. Whitehouse said that over a period of ten years he had himself on an average performed induction upon 6·3 cases per annum. Minor reasons which were sometimes given for performing induction included very recent pregnancy, debility or loss of weight, and eugenic considerations. Probably a fit person to decide when a pregnancy should be terminated in the absence of gross organic disease was the general practitioner. If the medical profession were agreed that this should be so, they should broaden their views and extend their standards; but everything ought to be above board, so that the medical profession should have nothing in common with the abortionist.

Dr. R. H. J. M. CORBET (Dublin) said that the Catholic attitude to abortion was the logical outcome of the view that the fœtus was a living individual. It was contrary to the law to attack an innocent person and it was necessary to decide whether the fœtus was an innocent person or an unjust aggressor. Where the condition affecting the patient was not due to pregnancy the fœtus was innocent. In toxæmias or hyperemesis gravidarum there was no proof that the pregnancy was abnormal and the fœtus could not justly be interfered with even if it destroyed the mother's life. Fortunately the fœtus often died earlier in such pregnancies than used to be supposed, so that the objection to emptying the uterus disappeared. When science and moral truth came into conflict science must be wrong. Craniotomy performed on a living child was now regarded as a sign of bad midwifery; it had always been wrong morally.

Dame LOUISE MCILROY said that at the Royal Free Hospital they dealt with large numbers of cases of pregnancy occurring in women with active tuberculosis or with heart disease; in cases of active tuberculosis abortion was induced. In cases of chronic renal disease pregnancy was also terminated, to preserve, not the life, but the health of the mother. It was not her practice to induce labour for toxæmia, as it was found that treatment by rest eliminated the need for induction almost entirely in such cases. Women nowadays regarded the products of conception as their own property, for disposal as they thought fit; they demanded abortion as a right. Pregnancy, in the view of Dame Louise, should be terminated to save life or prevent future ill-health, and though she had no religious or moral scruples in performing the operation on these grounds, she felt, on every occasion, that she was committing justifiable homicide, and that the need to induce labour was a confession of failure. The medical profession should consider neither political nor economic arguments, but only the health of the race.

Prof. MUNRO KERR (Glasgow) said that the rise in fatalities from abortion in recent years had been distinct, and was beginning to affect the total maternal

mortality. There was a feeling among women that they were prepared to have three, four, or five children, but that they could not afford more. Contraception might prove the solution in many cases. There was enough latitude at present for the practice of therapeutic abortion, but it was unwise to extend the use of the operation for reasons other than those involving the mother's life and health. No bill could be drafted which would safeguard the fabric of society while allowing more latitude in this direction. In Edinburgh it had been suggested that a committee of medical men should meet to decide whether pregnancy ought to be terminated in a given case. Renal disease was a definite indication; cardiac cases often went to term if nursed properly. It was hardly ever necessary to terminate pregnancy for hyperemesis gravidarum. If the mother was gravely ill it was much better to perform abdominal or vaginal hysterotomy than to waste time and add to risk by dilating the cervix.

Lieut.-Colonel SPENCER MORT (North Middlesex Hospital) said that the subjects of abortion, contraception, and sterilisation were bound up together. It was impossible to know whether an unborn child was going to turn out a Shakespeare or a Gœthe or a Pasteur. In some cases, however, the risk had to be taken. He had attended a case of a hunchback with a contracted pelvis who had already had six children; he was prepared to perform Cæsarean section and to sterilise her, but his Catholic assistant demurred on moral grounds. Lieut.-Colonel Mort had agreed to discuss the moral aspect after performing the operation, which accordingly went forward. At the conclusion his assistant had said: "I think you were right after all."

Dr. BINNIE DUNLOP (Malthusian League) saw no difficulty about drafting a bill; he suggested that it should provide that abortion was justified on medical grounds or if the patient had borne two children.

Dr. J. E. STACEY (Sheffield) thought compulsory notification would have an unfavourable effect. Women would try to hide the fact of abortion and hence, when complications arose, would come to hospital too late to be saved. Where abortion was necessary for therapeutic reasons he believed that it should always be accompanied by sterilisation.

Dr. KATHLEEN VAUGHAN (London) thought the welfare of the race was more important than that of the individual, and that it was endangered by contraception and abortion. The welfare of the mother could only be promoted by an improvement of social conditions so that it would no longer be necessary for her to contribute to the upkeep of the home by undertaking work outside her household duties.

Dr. MABEL RAMSAY (Plymouth) said that she had often wished to procure abortion on immature mothers; in one case she had seen a child of 12½ who had never menstruated give birth to an infant who turned out to be an idiot. The Aschheim-Zondek test was to some extent an encouragement to the abortionist, because women learned earlier of pregnancy.

Dr. L. W. HEFFERMAN (Swansea) thought that the general practitioner acquired a wide experience of normal pregnancy. He was opposed to the idea of notification of abortion. Where a girl had been raped he thought the question of procuring abortion might be considered.

Dr. GRAY WARD (New York) agreed with the view put forward by Dame Louise. In New York State it was compulsory to report abortions, and he was not sure that this had any value. When he found it necessary to induce abortion he gave an injection of pituitrin first, to cause contraction of the uterine wall and so to lessen the danger of perforation.

Dr. JOYCE NEWTON (Clapham Maternity Hospital) supported Dr. Corbet. She was sure that the woman of 40 who had borne a large family was in better health than the woman who had borne few or no children.

Dr. G. I. STRACHAN (Cardiff) thought that the therapeutic reasons for producing abortion were decreasing every year. He considered that if abortion were procured in women who had been raped the number of cases of rape would increase considerably.

Dr. JAMES YOUNG (Edinburgh) said that the medical profession was the servant of the State; it was the duty of the public to decide what measures they wished to legalise, and the province of the medical profession was to point out any dangers in the physiological and racial question involved. If, in the interests of the fœtus, induction was delayed as Dr. Corbet had suggested, there was a risk of sacrificing both lives.

Dr. ROBERT FOWLER (Melbourne) said that if there were indications for terminating pregnancy on therapeutic grounds there was an indication for preventing further pregnancies, and it was his practice to sterilise the woman at the time of operation. A declaration of this intention was often effective in preventing a woman from asking to be relieved of pregnancy for frivolous reasons.

Dr. J. S. FAIRBAIRN (London) thought that it was outside the province of the medical profession to discuss ethical or social considerations; they should stick to therapeutic criteria.

Dr. N. E. WATERFIELD (Great Bookham) said that in some places abroad where the facilities for diagnosis were limited it was not easy to decide whether the fœtus was dead or alive. Delay, in order to ensure that death of the fœtus had occurred, might mean loss of two lives, and he quoted a case where this had been the outcome of conscientious scruples on the part of an Italian doctor. He thought no doctor had the right to sacrifice the life of the woman before him for the hypothetical life of the fœtus.

Sir EWEN MACLEAN (Cardiff) said that a committee was to be appointed by the British Medical Association to consider the question of abortion. He thought it was the duty of the profession to express views on questions which affected the well-being of the community.

Prof. NAGUIB MAHFOUZ BEY (Egypt) thought that hyperemesis gravidarum required further consideration. He had seen cases where induction of abortion was essential to save the mother's life.

Dr. BETHEL SOLOMONS (Rotunda) considered that induction while the fœtus was alive was almost never necessary. By the time the woman was ill enough to require the operation the fœtus was dead. He agreed that induction was necessary in cases of hyperemesis gravidarum where the patient came for treatment too late.

Prof. J. ELLUL said that abortion was rarely induced in hospital in Malta, but many cases of incomplete abortion were admitted from outside. Owing to improvement in obstetric technique the indications for inducing abortion were now so few as to be almost negligible. The necessity might often, he thought, be avoided even in cases of hyperemesis gravidarum.

CORRECTION.—The remarks attributed to Dr. E. E. D. Gray on p. 264 of our last issue were made by his brother, Dr. St. George B. Delisle Gray.

PROCEEDINGS OF REPRESENTATIVE BODY

(*Concluded from p. 264*)

Health Services under the Local Government Act

The report of the Council included an analysis of the progress made by local authorities in the development of the policy embodied in the Local Government Act of 1929.—Dr. FLEMMING said that the local authorities had been told to stay their hand for the present, and this offered an opportunity for the Association to prepare and complete any plans that were in hand. The local authorities were not going to rest content, but would expand their scope as soon as the opportunity arose. It would be too late to object to the forms their schemes had taken once they were through. Now was the time to influence them effectively to lay their plans on lines approved by the Association.

Sir HENRY BRACKENBURY thought the present position of the Association should be borne in mind. The poor-law officers used to appoint the district medical officer, choosing him from among local practitioners, and remunerating him by salary or by fee per attendance. This system, on the whole, was fairly satisfactory. There were, however, two other methods which might now be adopted. One was the appointment of a whole-time medical officer at a fixed salary. The Association was strongly opposed to this system; a whole-time officer ought not to be responsible for domiciliary attendance. With this view the Society of Medical Officers of Health was in agreement, and was prepared to throw in its weight. The second method available was to open this section of work to all practitioners resident in the area, so that the poor man need not have his doctor set apart as "the poor-law doctor," but should have the same choice of practitioner as others in more favourable circumstances. The Association was investigating this system, and was finding that in most cases it could be adopted without loss to the local authorities, and in some cases with gain.—The meeting endorsed the proposal of Dr. Morse that further inquiries should be made during the coming year.

Dr. JOHN CLAYRE (Southampton) quoted with alarm the statement made by a medical officer of health that he was out to supply a full-time medical service to the public. This attitude was to be noticed all over the country, and he wished to sound a warning. Up to the present time local practitioners had been employed at special clinics; they were now gradually being cut out, and the loss of such posts meant loss of income to those who had held them. In Southampton there was a scheme for the provision of a full-time gynæcologist, physician, surgeon, and venereal diseases specialist, and their appointment would cut out men who were at present doing the work well. He considered that by following their present course some authorities, local and central, were failing to give proper effect to the intention repeated in various Acts of Parliament, that they should coöperate with and make use of existing voluntary organisations when making provision for various medical services; he proposed that the Representative Body should instruct the Council to report on the matter.—The meeting supported his proposal.

Practitioners Access to Hospitals

The protection of the part-time officer was the subject of a further motion, introduced by Dr. W. M. RENTON (Dartford), to the effect that the Representative Body considered that the continuance of practitioners efficient as part-time members of the visiting staffs of council hospitals and clinics was of the utmost professional value and greatly to the public interest; and that in place of being curtailed, this part-time service should be extended in every possible direction. He was preaching to the converted, as Sir HENRY BRACKENBURY made clear; the Association was agreed that these posts should not be abolished but increased in number.—Dr. RENTON in replying said that he was referring particularly to clinics attached to the hospitals of local authorities; part-time appointments were being wiped out in many of these, and he wished the eyes of the meeting to be open to the menace.—The meeting observed the menace and supported the motion.

Dr. B. MORRIS, for Tower Hamlets, moved that it was in the best interest of the patient that there should be more consultation and further coöperation between general practitioners and the medical officers of provided hospitals.—Dr. E. W. G. MASTERMAN said that it was the policy of the London County Council to encourage such coöperation. Where there was failure it was due to the failure of individuals. The general practitioner could now send his cases directly into hospital without application to the relieving officer, and in all the L.C.C. hospitals the doctor might come and see his patients as often as he wished. The fullest possible information was supplied to him, and a report on the patient was sent to him whether he asked for it or not. Consultations must be a matter of arrangement between the general practitioner and the members of the hospital staff. It was not the business of the local authority to provide that a general practitioner coming in for such a consultation should receive a fee, but he was, of course, at liberty to arrange with his patient to make what charge he thought fit.

Dr. J. T. D'EWART said that his experience in a Manchester hospital had been disillusioning. It had been arranged, years before, that the general practitioner should have access to the poor-law hospital to see his patients, and that the medical superintendent would supply information if desired. In a form issued to general practitioners, to be sent in with their patients, there was a section asking what report the doctor wished to receive, and in 60 per cent. of cases the reply was "none." In addition to this deplorable lack of interest, general practitioners failed to make use of their opportunity to send the patient directly into hospital, but continued to appeal to the relieving officer who nowadays had no control over a public assistance hospital.—Dr. CLAYRE quoted from a letter, written by the medical officer of a cottage hospital in his area, when asked to provide facilities for general practitioners to visit their patients; this officer thought visiting hours for doctors undesirable because they would try "to upset the treatment given to the patients." Dr. Clayre found the lack of interest described by Dr. D'Ewart most surprising. In his own division every effort was being made to obtain access to public assistance hospitals.—Dr. CLARKE said that in Leicester access to hospitals had been arranged, but this, in itself, was very little use. The general practitioner needed to see other cases for comparison, and it should be possible to arrange for him to take some sort of post, such as a clinical assistanceship, for this purpose. Facilities should be offered to general practitioners in public assistance hospitals in order that they might study other cases in addition to their own.—The motion was also supported by Dr. RENTON, and by Sir HENRY BRACKENBURY,

who pointed out that it was a re-enunciation of the policy of the Association; the meeting gave it unanimous support.

Dr. R. BOYD, for Manchester, proposed that, as outlined in the hospital policy, the Association should press at the earliest opportunity for the right of general practitioners to treat their patients in general hospitals.—Dr. PETER MACDONALD said that a resolution which spoke of the rights of the general practitioner would merely raise difficulties; he suggested that Dr. Boyd should modify his demands to "facilities for general practitioners to treat their patients in hospitals," and to this change Manchester agreed.—Mr. MCADAM ECCLES thought it would be impossible for the general practitioner to come into the large voluntary hospitals to treat his patients. More "home hospitals" were needed, of the type described in the scheme for a general medical service drawn up by the Association.—The motion was opposed by Dr. E. M. COWELL, Dr. ASTLEY CLARKE, and Dr. E. O. TURNER.—Sir HENRY BRACKENBURY, however, pointed out that the motion began with the words "as outlined in the hospital policy," which so softened the context that the meeting accepted it without more ado.

Private Practitioners and Mental Disorder

Dr. R. G. GORDON brought forward the report of the Committee on Private Practitioners and Treatment of Mental Illness, of which he is chairman. It was hoped, he said, that this report would form a guide to practitioners on the lines on which treatment would proceed.

An amendment moved from the chair for Tower Hamlets was carried; it provided that, in the opinion of the Representative Body, the establishment of special institutions for the treatment of "borderland" cases should be encouraged, and that special provision for the out-patient treatment of borderland cases should be made in every health area.

Dr. E. K. LE FLEMING, for Bournemouth, introduced a motion designed to stress the importance of increasing facilities for short-time resident appointments in mental hospitals, just as in general hospitals.—Dr. GORDON said there were difficulties in the way; the newly qualified man was not as thoroughly instructed in mental illness as he was in medicine and surgery. Moreover, local authorities might try to run hospitals with several house physicians under a medical superintendent, dispensing altogether with assistant medical officers. Assistant medical officers, however, were those who wished to retain their posts and learn their job thoroughly. At his suggestion the amendment was referred back to Council.

Dr. W. F. MENZIES (North Stafford) wished that the psychoneuroses had been separated out in the report instead of being grouped together. One of the objections to the appointment of short-time clinical assistants was the shortage of accommodation; part-time appointments of the kind would be unsatisfactory. He proposed the deletion of the last three lines of the report, which read: "that if and when a sufficiency of adequately qualified consultants in mental illness are available, whole-time salaried medical officers should be precluded from undertaking private consulting work."—The motion was seconded by Dr. G. H. BROWN.—Dr. DAVID RICE thought the "if and when" were very large, but pointed out that if this sentence was left out of the report the practitioner and patient would be forbidden to appeal to a consultant simply because he was a whole-time official.—Sir HENRY BRACKENBURY agreed that the "if and when" was large, and recognised that it was contrary to the usual policy of the Association to concede that whole-time officers should be allowed, at the moment, to do consultant work. The position, however, called for compromise, because there were not enough private consultants at present to do the work.—Dr. ELIZABETH CASSON supported and Dr. H. C. BRISTOWE opposed the amendment.—Dr. GORDON pointed out that the whole-time officers need not fear interference for many years to come, and he doubted whether there would ever be enough private consultants available.—The amendment was lost, and the meeting, having accepted the report, agreed that it should be published.

Ophthalmic Benefit

Mr. BISHOP HARMAN said that during the past year the cases treated by the National Ophthalmic Treatment Board had increased from 21,673 to 43,032. There were now 228 provincial and 59 metropolitan centres. There were not sufficient numbers of sight-testing opticians yet to meet the needs of the scheme, and members were asked to recommend reliable ones. The approved societies were becoming more favourable, and 420 of them now made use of the scheme.

Dr. D. F. TODD, for Sunderland, moved that steps should be taken to amend the present procedure, so that medical practitioners might send their patients directly to the ophthalmologist instead of through the intermediary optician. He had obtained evidence that in some cases the optician never sent the patient on to the ophthalmic surgeon, but gave treatment himself.—Dr. C. M. STEVENSON pointed out that the same point had come up last year, and that the advantage of the scheme was that the optician undertook all the clerical work; it was on this understanding that the ophthalmic surgeon was prepared to accept a fee of 10*s*. 6*d*.—Dr. WEST-WATSON opposed the motion, and Dr. LUKIS supported it on the grounds that in a few acute cases the present system involved dangerous loss of time.—Dr. AGNES ESTCOURT-OSWALD thought the system was fostering the erroneous notion that it was just as good to go to an optician as to an ophthalmic surgeon.—Dr. MARIAN GILCHRIST also supported the motion.—Dr. MACDONALD thought the system expedited matters for the insurance patient, who often had to wait weeks for treatment in the ordinary way.—Dr. MURRAY considered delay was inevitable where a middleman was involved.

Mr. BISHOP HARMAN again explained that the scheme was based on the use of the optician as a clerk. If the present arrangement was interfered with the scheme would be wrecked.—Sir HENRY BRACKENBURY moved that the meeting should move to the next business, which they were happy to do.

Dr. A. H. MACKLIN (Dundee) complained that the approved societies were not all taking advantage of the scheme, and were still sending their patients to sight-testing opticians. In some cases the certificate signed by the practitioner, stating that the patient should see an ophthalmic surgeon, had been sent to an optician for an opinion.—Sir HENRY BRACKENBURY said that the Council realised that in some cases the approved societies were not making all the methods of obtaining ophthalmic benefit clear to patients. To ensure treatment under the National Ophthalmic Treatment Board the practitioner should explain to the patient that he should tell his approved society that he wished to be treated under the Board.—Mr. BISHOP HARMAN said that free choice of scheme between all parties was one of the conditions of the

understanding between the Board and the approved societies; steps were being taken to avoid breaches of this agreement, but the Committee needed to be supplied with the necessary facts by members of the Association.

Management of Hospitals

Dr. PETER MACDONALD, chairman of the Hospitals Committee, speaking of out-patient departments said that the essence of the Association's policy was that such departments should be consultative, and this was to be secured by requiring every patient to bring a doctor's letter. There was some evidence that this was being recognised and accepted by hospitals. Recently the Stepney Medical Society had sent a letter to all the local hospitals recommending this method of organising out-patient departments, and had received a favourable reply from all except Guy's Hospital, which said there would not be enough trivial cases admitted under such a system for the training of students. The Council believed that Guy's were mistaken in this view. Certain contributory schemes made it a rule that patients should take a doctor's letter with them to hospital. It was important that members of hospital staffs should persuade the governing bodies to share this view. During the year the British Hospitals Association had invited the Council to appoint representatives, under the chairmanship of Lord Linlithgow, to investigate with them the relationship between the managements of voluntary hospitals and their honorary medical staffs. The report of this conference contained valuable recommendations upon the payment of visiting members of the staff who attended contributing patients. Too much must not be expected from the report as yet however. The scheme for the provision of a consultant service for contributory patients had been justified, 410 consultants having already been admitted to the list in London.

Dr. L. A. PARRY (Brighton) introduced a motion to ensure that any standing joint committee appointed by the Association in conjunction with the British Hospitals Association should include general practitioners; and that this committee should give advice to hospitals and medical boards only when they were conjointly seeking guidance. The Brighton division felt that the medical staff should be able to seek advice from the British Medical Association and the hospital from the British Hospitals Association.—The motion was opposed by Dr. MACDONALD, who was unable to see why the medical staff should not seek advice from the joint body if they wished. The meeting, however, accepted the view of the Brighton division by 70 votes to 67.

The altruism of a motion, introduced for Kensington by Dr. J. COHEN, was misunderstood by the meeting. The motion proposed that patients in private rooms of hospitals, as well as in general wards, should have a maximum means test applied to them.—Dr. MACDONALD said that there was no case for applying such a test to patients in private wards. Fees should be a matter of arrangement between patient and doctor.—Dr. COHEN explained that it was merely in justice to the hospital which might be entertaining patients well able to afford to go elsewhere that this suggestion was made, but in vain; the meeting refused to support the motion.

Dr. R. BOYD, for Manchester, moved that no consultant board should have "absolute discretion" with regard to membership of a consultant's list.—The united eloquence of Dr. MACDONALD, Mr. BISHOP HARMAN, and Dr. HAWTHORNE failed to persuade him that, in fact, no consultant board had such powers. It was the duty of the board, they explained, merely to decide whether the applicant fulfilled one of the requirements laid down in the policy of the Association; if he did he could not be excluded from the list.—The meeting rejected Dr. Boyd's motion.

A motion introduced by Dr. DELISLE GRAY, for Brighton, that consultant boards should contain representatives of psychiatry and ophthalmology was also lost, on the grounds that every other form of consultant service should also be represented if these two were accepted.

Mental Deficiency

The report of the special committee on mental deficiency appointed by the Council in November, 1930, was presented to the meeting by Prof. R. J. A. BERRY, its chairman. He spoke of the seven stages in the life of the mentally defective person, beginning with the mewling and puking infant; the general practitioner, he said, had excellent opportunities for the early diagnosis of mental defect, and this was of great value. In the second stage, the whining schoolboy, the child came under the Education Act of 1921 and the Mental Deficiency Acts of 1914 and 1917. If he was to receive the benefit of special education he had to be certified mentally defective—a requirement of which the committee entirely disapproved. The third stage was the lover; at puberty the mentally deficient child became subject to sexual emotions which in normal people were repressed, but against which he was not equipped with normal control; it was at this age that he was liable to develop the characteristics of the moral deficient. It was better to certify such an adolescent person as feeble minded, since certification as moral defective required considerable judgment and special care. Stage four was "the soldier, full of strange oaths"; bad language was not necessarily a sign of mental deficiency, but a limited vocabulary was characteristic. The justice (stage five) "in fair round belly with good capon lined" might indicate the care and excellent physical conditions enjoyed by the segregated mentally deficient. In the sixth stage, that of the lean and slippered pantaloon, it became evident that the cerebral neurones were unable to stay the course; amentia often degenerated into dementia, and so into the last stage—"sans teeth, sans eyes, sans taste, sans everything." With regard to sterilisation the committee had not adopted a hasty or unreasonable opinion. He thought the meeting would be wise to regard this question as still sub judice.

Dr. A. HAWKYARD (Leeds) said that education authorities were loth to encourage certification. Special schools were expensive, and each mentally defective child cost £23 per annum as opposed to £20 per annum for a secondary school student.—Dr. J. MIDDLETON MARTIN emphasised the disadvantage of having to certify a child as mentally defective before he could receive special training.—Dr. E. H. T. NASH referred to the person who had adopted a child who afterwards turned out to be deficient; under the present system the adopter was not allowed to relinquish the child having once adopted him.—The report was further discussed by Dr. W. F. MENZIES, Dr. J. S. MANSON, and Dr. R. G. GORDON.—Dr. D. CLOW (Gloucestershire) said that it must not be assumed that every mentally deficient person was so much affected by the stimuli of puberty as to become a moral ament. In the Wood report the number of mentally defective persons in England

and Wales was stated to be 300,000, and there must actually be an enormous number over and above this, but a large proportion of them were earning their livelihood and must not be regarded as a burden on the country.—Sir HENRY BRACKENBURY extracted some facts of special interest from the report, as follows: (1) Not every mental deficient was guilty of antisocial conduct. The majority behaved socially and sexually as well as the average citizen. (2) Not every malefactor or offender was mentally deficient, and the majority of those who committed forms of antisocial conduct were normal mentally. (3) It was an outrage that in order to secure for a child the kind of education he needed it was necessary to certify him; it should be possible for every child to receive the sort of education he required. (4) The families of mentally defective parents were not appreciably larger than those of ordinary persons of the same class. (5) Sterilisation offered no hope of racial improvement; the results achieved would be too small.

The report was accepted with appreciation by the meeting.

Sweepstakes

A discursive argument on sweepstakes was determinedly quashed at the outset by the chairman, who reminded the meeting that they were required, by the motion before them, to decide whether or not they wished the Council to consider the desirability of laying evidence before the Royal Commission on Lotteries and Sweepstakes.—Dr. J. S. MANSON introduced the motion for Warrington, and Sir HENRY BRACKENBURY asked the meeting whether it was fair to ask the Council to consider laying evidence without giving them some inkling of what the evidence was to be.—The motion was lost.

Abortion

A motion introduced by Dr. G. POLLOCK, of Wandsworth, was amended at the outset, and instructed the Council to consider the question of setting up a special committee, including members of the legal profession, when the finances of the Association should permit, to consider any modification or modifications of the law dealing with abortion.

Dr. L. A. PARRY said that criminal abortion was increasing enormously, and that there was no doubt that the punishment for procuring abortion was extremely severe and out of proportion to the crime. He thought the subject was one which merited serious consideration.—The motion was accepted by the meeting.

Post-mortem Examinations

Kensington was anxious that general practitioners should have the opportunity of performing post-mortem examinations, and a motion was introduced by Dr. COHEN to encourage this.—He was supported by Dr. H. M. STRATFORD, who said that the family doctor often had knowledge of the history of the case which was valuable at a post-mortem examination.—Dr. F. TEMPLE GREY thought that this argument was much the same as saying that the man who diagnosed appendicitis was necessarily the most suitable person to operate. He thought, however, that it was of great advantage to the pathologist to have the general practitioner at hand when performing an autopsy, and he considered that the general practitioner should receive a fee for such attendance.—The motion was supported by Dr. J. H. THOMPSON, but on the suggestion of Sir HENRY BRACKENBURY was referred back to Council.

Public Medical Services

Dr. CHRISTINE MURRELL introduced a motion, for Kensington, proposing that, in view of the importance of the development on right lines of the public medical services being set up throughout the country the Council should appoint a committee, or modify one of the standing committees to deal with the problems involved. The British Medical Association, she said, could do much to coördinate the activity of these medical services, and to provide for their development upon more or less uniform lines.—The motion evoked great interest.—Sir HENRY BRACKENBURY hoped it would be withdrawn because the Council had been interested in the development of these services for many years, and the subject was already upon the agenda of the medico-political committee. To set up a new committee or to modify one of the standing committees would be expensive and quite unnecessary. He suggested that the subject should be referred to one of the existing standing committees.—Dr. THOMPSON supported the motion, and so did Dr. R. LANGDON-DOWN, who thought the public medical services extremely important. So far, he said, the Council had not figured effectually in furthering such schemes, and at present they were threatened with the danger of unwise or uncoördinated action.—Dr. A. KEITH GIBSON thought that as each of these services sprang up a representative of it should be placed on a central committee of the Association, so that when these schemes had become general enough to attract the interest of the Government there would already be a committee in existence.—Dr. STRATFORD also supported the motion, and Dr. E. R. C. WALKER thought it was much the most important activity of the Association at the present time; it was the spearhead of attack against encroachments on general practice.—Dr. FRANK GRAY and Dr. N. E. WATERFIELD were also heartily in favour of the motion, which was carried after being slightly modified to meet Sir Henry's suggestion.

SECTION OF FORENSIC MEDICINE

Sir William Willcox, president of this section, entertained a small company of lawyers, doctors, and public men, interested practically in medico-legal affairs, to dinner at the Athenæum, on Wednesday last, July 27th, many of the guests proceeding later to the Guildhall reception.

CONVERSAZIONE AT THE GUILDHALL

On the evening of Wednesday, July 27th, Sir Maurice Jenks and the Lady Mayoress, accompanied by the Sheriffs of the City of London and their ladies, welcomed the delegates in the library of the Guildhall, after which the large and distinguished company enjoyed a conversazione arranged by Colonel R. J. Blackham, M.D., chairman of the reception committee. There was dancing to the Clifford Essex orchestra on Dick Whittington's beautiful Purbeck marble floor; there was on view a full selection of the City's ancient records, including charters of William the Conqueror and King John, a display of the famous Mansion House plate, and a collection of pictures belonging to the Corporation; refreshments being served in the crypt under the council chamber and in the still more ancient crypt adjoining the museum, with its clustered marble columns traditionally dating from A.D. 1411. The coming of the

Association to the ancient Guildhall, as indicated in a handsome keepsake, might be regarded as a visit to the ancestral home, for it was in the City of London that the three great medical corporations had their origin. In spite of the numbers present the instruction to the guests to keep to the right when circulating through the building proved unnecessary, as there was ample space and air throughout an evening crowded with interest.

CENTENARY DINNER

Nearly two thousand members and guests attended the centenary dinner of the Association held in the Albert Hall on July 28th. Lord DAWSON, the President, took the chair, and the principal guest was the PRINCE OF WALES, who, after the loyal toasts had been honoured, proposed the health of the Association. He said that the King and Queen were very pleased that he had the privilege of being present at this celebration; they had always taken the greatest possible interest in all the activities of the medical profession. When the members had visited Worcester to honour the memory of their founder, their thoughts must have ranged from the Association's very humble beginning to the position it held to-day—a very important cog in the medical machinery of the country. It had also imperial aspects. No part of the Empire could remain separate in medicine any more than it could in history and economics. He would like personally to welcome the delegates from overseas. In proposing that toast and congratulating the Association on its achievements in a century, he asked it to bear in mind not only the success that lay behind, but also the bearing of that success on the future. Such success must carry increased responsibilities, expanding opportunities, and the risks of both.

In work and play he had fallen into the hands of many doctors in many parts of the world, but whenever and wherever he had turned to doctors for treatment or for advice he had found common sense and friendliness as well as professional skill. He had had so much advice, and had learned so far how to keep fit, that he had to some extent become his own doctor. That this was a good thing was illustrated by the story of a doctor who had suffered from acute lumbago and had tried a Turkish bath. There he had obtained great relief, and on emerging from the building had not been able to refrain from remarking to the attendant, "And to think that I am treating 40 patients for lumbago!" His Royal Highness had had many opportunities of watching the work of doctors in every part of the world. It would be difficult to find any country, any place or community, any service or profession, any industry or occupation in which doctors were not called upon to function in every line of medicine and under every kind of climate and condition. He had first really understood what doctors were capable of on active service during the war, and those who were not members of the profession had never ceased in their admiration of the work of the medical officer in the front line. Supposed to be non-combatants, many of them people who had never thought of war and had been looking forward to practice, they had suffered the same hardships as the combatants and worked very much harder when the battle was over. The regimental medical officer was one of the finest men that the war had produced. There was to be considered, he continued, the wonderful record of preventive medicine and the reduction in death from epidemic diseases. In the years since the war His Royal Highness had watched the innumerable activities of the profession; at work among the poor, in general hospitals—great and small—in institutions and clinics for cripples and the tuberculous, for mental cases, for the blind, deaf, and dumb, and for sick children. It was always the same story of high endeavour, public service, and great responsibility. The doctor was always a very good friend indeed to every section of the community, and he was glad to have the opportunity of expressing his abiding interest, admiration, and sympathy with the medical man in practice.

Two points about the British Medica .Association impressed him a great deal. The first was the public service which it had rendered to English medicine all over the world. It had been the advocate of certain special movements such as vaccination, the universal and accurate certification of the cause of death, the creation of adequate medical services for the poor, the establishment of the public health service for all, the passing of medical acts which regulated professional training and discipline, and the effective way of carrying out health insurance work. The goal would only be reached when every member of the community could obtain wise and practical preventive medicine, and the most skilful home or hospital treatment at a cost in keeping with his purse. Insurance against sickness seemed to be the only way for people of limited means, and as a contribution to this end the King Edward's Hospital Fund supported the British Provident Association and the Hospital Saving Association. All this insurance against sickness was definitely a great step in the right direction. He wished to pay tribute to all who were helping to maintain the high level of the voluntary hospital system.

The second point that impressed him was the way in which the Association had concerned itself in the well-being of the medical practitioner. It was impossible to have effective public services and sound and scientific private practice unless the doctor himself was a reliable man, a well trained, competent, and skilful man, whose position and function were properly maintained and safeguarded. There was a close personal relationship between the patient and the doctor; the patient was not a disease but a person. It was essential to preserve this relationship. In conclusion, His Royal Highness urged the profession never to dissociate its professional interest from the paramount interest of the public, for the two were inseparable. As it made its service as wide as the needs of humanity, it would be an example and an inspiration throughout the whole of the civilised world.

Sir HENRY BRACKENBURY, in reply, said that the British Medical Association, with the closely affiliated Canadian Medical Association, represented in large measure the medical profession throughout the Empire. Science knew no frontiers, but the Association was a powerful force tending to knit more closely the nations of the commonwealth. It was also a unifying force in that it comprised every variety of medical practice. It was more comprehensive and more widely spread than even Sir Charles Hastings had dared to hope, and was fulfilling the objects he had had in mind: the spirit of friendliness, honour, and service. As century followed century the profession would still be found maintaining its honour unsullied and giving itself freely to the service of the community.

THE GUESTS

Mr. H. S. SOUTTAR (President of the Metropolitan Counties Branch) proposed the health of the guests. He said that their presence was the visible proof of the solidarity of medicine. The fraternity of medicine was one of the most powerful factors that had ever arisen for the unity of the world. Each member was an ambassador for peace and goodwill, and it was fitting to have as the principal guest the greatest ambassador England had ever known. If each in his small way followed the Prince of Wales's example, there would be no need for a League of Nations. He welcomed by name the Home Secretary, the Minister of Health, and the Bishop of London, and said that to the guests from the colonies the hearts of all the hosts went out; he hoped they would go away with some feeling of the affection and admiration felt for them. Speaking in French, he then welcomed continental representatives, and he concluded with a reference to the spirits of great men who must be with them on that occasion.

Sir HERBERT SAMUEL, replying, thanked the Association for the inestimable services rendered by an illustrious profession. Any government facing a general election and wishing to gain the confidence of the electorate asked at once for a doctor's mandate. If afterwards the doctors differed, there was proverbial precedent for that. The great thing was that the patient seemed to be slowly recovering—whether because of or in spite of the doctors might, in this instance only, be considered doubtful. More than one department of government was concerned with health; the Ministry of Health was devoted primarily to prophylaxis; the Board of Education was caring for the minds and bodies of the children; the Home Office was concerned with health in industry; and even the Prison Service was bringing the country nearer every day to the conditions of "Erewhon." He expressed his congratulations to the Association on its organisation—a power which seemed inherent in the British Isles. Though a hundred years old, the Association showed no signs of senility; it was not suffering from arterio-sclerosis or brain anæmia or paralysis agitans. The triumphant march of the battalions of science had conquered disease after disease, and whoever took arms in that war was the friend of mankind. This was certain: that health was better than sickness, and life than death. Members of the medical profession could feel sure, therefore, that their work was worth doing. The guests mingled congratulation with their thanks.

Sir HENRY NEWLAND (President of the Royal College of Surgeons of Australasia), also in reply, spoke of the magnificence of the hospitality that had greeted them; the guests had not been allowed to remain in the suburbs of their hosts' hearts. They had come, they had seen, but only time would show whether they could survive!

DINNER GIVEN BY THE "PRACTITIONER"

A dinner was given on Friday, July 29th, by the *Practitioner*, to a large group of medical men, British and foreign, assembled in honour of the centenary, when the chair was taken by Sir Humphry Rolleston, controlling editor of the magazine in association with Mr. Scott Stevenson. The speeches were limited to the toasts of prosperity to the Association and health to the chairman. The toast of "the Association" was given by the Rt. Hon. J. W. Hills, chairman of the company which owns the *Practitioner*, who spoke briefly of the position which the Association now enjoys. Sir Henry Brackenbury having responded, Mr. Brendan Bracken, M.P., proposed the health of the chairman and took the occasion to make an optimistic speech in respect of the national health in the financial world troubles. His clear and amusing reassurances were received with much approval. Sir Humphry Rolleston having replied, the gathering insisted upon hearing Lord Dawson of Penn, who had been unable to be present at the dinner but had entered at its close. Lord Dawson's message to the congressists, who are now disbanding to all parts of the Empire, was to the effect that the acknowledged success of the centenary meeting justified the power of coöperation and the value of social intercourse. Many of the company then proceeded to a dance at the Grosvenor which formed a close to the social aspect of the centenary programme.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICES

Surg. Comdr. (retd.) H. H. Ormsby to be Surg. Capt. (retd.).

Surg. Comdr. H. D. Drennan is placed on the retd. list with the rank of Surg. Capt.

Surg. Lt. A. J. A. Gray is transferred to the permt. list.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Sub-Lt. J. F. M. Milner to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Majs. J. Hare and N. T. Whitehead retire on retd. pay.

Maj. O. D. Jarvis retires, receiving a gratuity.

Lt. (on prob.) T. M. R. Ahern is restd. to the estabt.

Lt. W. A. G. Bell (temp. commn.) to be Capt.

The undermentioned Lts. to be Capts.: H. G. G. Robertson, V. C. Verbi, H. C. Benson, and M. J. Malley.

Lt. T. J. Moloney from a temp. commn. to be Lt. (on prob.).

ARMY DENTAL CORPS

Col. J. P. Helliwell (late A.D. Corps) is apptd. Col. Comdt., vice Lt.-Gen. Sir T. H. John C. Goodwin, who has resd. the appt.

TERRITORIAL ARMY

Col. W. D. Watson, A.D.M.S., 54th (E. Anglian) Div., having attained the age limit retires and retains his rank, with permission to wear the prescribed uniform.

Lt.-Col. J. H. Owens, from Gen. List, R.A.M.C., to be Col., and is apptd. A.D.M.S., 54th (E. Anglian) Div., vice Col. W. D. Watson.

Lt. A. L. Crockford to be Capt.

ROYAL AIR FORCE

Flying Officer J. F. S. Wiseman is promoted to the rank of Flight Lt.

AUXILIARY AIR FORCE

No. 608 (North Riding) (Bomber) Squadron.—Flying Officer J. E. Howell is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE

Capt. (prov.) J. H. Gorman is confirmed in rank.

Lt.-Col. C. A. F. Hingston retires.

Lt. (on prob.) P. E. Sweeney relinquishes his prob. appt

SOUTHEND NEW GENERAL HOSPITAL.—On July 26th the Earl of Iveagh opened the hospital, the foundation-stone of which was laid by the Duchess of York in November, 1929. The building will accommodate 220 patients, including a special ward for 21 paying patients, with separate home for 64 nurses. It was designed by the late Mr. H. Percy Adams, F.R.I.B.A., and constructed by Mr. John G. Gray, of Coventry. In the course of his speech, Lord Iveagh announced that the building would be opened free of debt; he has, in fact, made himself personally responsible for the outstanding liability of £50,000, bringing up his total benefaction to £97,700. When fully equipped the hospital will take the place of the hospital in Warrior-square, which was built as a memorial to Queen Victoria's jubilee. Dr. L. Gordon Hopkins, chairman of the building committee, referred to three innovations: the introduction of a specialised medical staff, the provision of pay-beds, and the setting up of a maternity service. The new hospital, which abuts upon Prittlewell Chase, was open to the public for inspection daily up to August 2nd.

MEDICINE AND THE LAW

Doctors' Dispute: Sale of House with or without Practice

THE chapter on The Transfer of Practices in "The Conduct of Medical Practice" warns prospective purchasers that, if they buy a doctor's practice, they must be careful to secure adequate tenure of his house. If the buyer finds he has only a short lease of the house, he is at once in trouble. He will have the expense and worry of finding fresh accommodation; this may prove far from suitable. He may even find himself homeless, in which case the value of the practice he has bought is nugatory. Or a rival may acquire the house, probably gaining some of the patients also. The converse question of buying the house without the practice was raised in the case of Radcliffe *v.* Mackinnon in the Chancery Court of Lancaster last month. The jurisdiction of this court is a survival of the *jura regalia* (including the sole administration of justice in courts both of law and equity) formerly possessed by the county palatine of Lancaster. The Chancery jurisdiction remains and is exercised by the Vice-Chancellor who enjoys the powers possessed by a High Court judge of the Chancery Division. The parties in the case were two doctors. The plaintiff, lately practising in Oldham, claimed specific performance of a written contract to buy from him his house in Oldham. He said he never intended to sell his practice, which was a personal one, partly surgical, partly consultative, and comprised private patients who could not be transferred. He said he had been anxious to help the defendant (who was buying the house) and had promised to introduce him to as many patients as he could. The defendant doctor said there had been a verbal agreement to buy house cum practice and not merely the house property alone; he understood the written contract which he had signed to be for the purchase of the house and practice. He counterclaimed for rescission of the contract, alleging that it did not contain all the terms of the agreement made verbally between the parties and that he had signed it under a mistake.

For technical legal reasons it fell to the defendant to open his case first. He gave evidence that the plaintiff told him he wanted to sell his house and practice as he was leaving Oldham. The defendant thereupon had pointed out his difficulties; his own practice was more than he could manage and it was largely that of a physician, whereas the plaintiff's practice was largely surgical. The plaintiff, he said, then suggested he should take a partner who could undertake the surgical side of the combined practices. This the defendant decided to do: he was able to call two medical witnesses who had answered his advertisements for such a partnership and had negotiated with him on that basis. Subsequently at a chance meeting with the plaintiff's solicitor (who seems to have acted for both parties in the drawing up of the written contract) the defendant discovered that the plaintiff took the view that the practice had not been included in the sale. This took him by surprise and upset his arrangements with the prospective partner. The sale money (£3500) was, in the defendant's opinion, much more than the house alone was worth; on the other hand, the plaintiff said he had spent £8000 on the house and £2000 on the garage, to which the defendant rejoined that the work must have been done at a very expensive time. The manager of the Manchester branch of the British Medical Bureau gave evidence that in nine years' experience of the transfer of medical practices he could recall no case where a doctor had purchased another doctor's house without getting the goodwill of the practice; possession of the house without the practice was of little benefit. He regarded the plaintiff's practice as semi-specialist, saleable to a surgeon but not to anybody else, and worth a year's purchase.

After the plaintiff had in turn given evidence, the case had reached the stage at which the judge had to decide where the truth lay in this misunderstanding. It was impossible to reconcile the two versions. He accepted the defendant's evidence as truthful. The plaintiff, he observed, had said he was not prepared to sell the practice because he did not think it transferable, but he was quite prepared to take a price for the house which he knew was more than the market value and there was no reason why he should object to sell the practice if he could get a purchaser. Had the defendant been told, continued the judge, that the practice was not to be sold, he would have said the whole matter was at an end. As it was, he signed the contract in the mistaken belief that the sum of £3500 included both house and practice. The defendant's mistake was directly created, or contributed to, by the plaintiff. In the circumstances the plaintiff's claim for specific performance failed, and the defendant succeeded in his counterclaim for rescission of the contract and was entitled to his costs.

This seems to have been one more of those cases where the bringing into court of a dispute between doctors has not conspicuously benefited either the parties or the medical profession. Are there no facilities for arbitration without the expense and publicity of a law-suit? It may be added that people who sign written agreements ought to be careful to see that the document expresses their intentions. If there is any room for doubt, separate legal advice is desirable. At common law a party to a written contract cannot count on being allowed to go behind the terms of the document.

The Spahlinger Libel Action

Application was made at the end of the recent legal sittings for fixing the date of the libel action brought by Mr. Henry Spahlinger against the *Daily Mirror* Newspapers, Ltd., and Dr. W. Camac Wilkinson (author of an article in the *Daily Mirror* of which the plaintiff complains). Sir Patrick Hastings, on Mr. Spahlinger's behalf, explained that the action would raise questions of the efficacy or otherwise of the plaintiff's inventions. These inventions, if well founded, were of world-wide importance. Many governments were concerned in them, and it might become necessary to publish the results and merits of certain tests which a certain government was now undertaking. On both sides medical testimony from many countries would be necessary. Mr. Justice Acton fixed the hearing of the action for Nov. 14th.

Sale of Lysol by Chemist's Assistant

We referred last June [1] to the unsuccessful appeal by the Council of the Pharmaceutical Society in the Wendover case where a local chemist was absent for 42 hours weekly in fulfilling an engagement at Halton Camp for the purpose of dental work. The chemist being thus absent, upon three occasions lysol was sold by his assistant. The Society took the view that this was a breach of Section 3 (1) of the Poisons and Pharmacy Act, 1908, whereby a registered chemist is

[1] THE LANCET, 1932, i., 1220.

liable to a penalty unless, in all premises where the business is carried on, the business is bona fide conducted by himself or by some other duly registered chemist, and unless the name and certificate of qualification of the person by whom the business is so conducted is conspicuously exhibited on the premises. The county court judge at the Aylesbury Court found against the Society; the Divisional Court declined to reverse his finding; and now the Court of Appeal has refused to interfere. Lord Justice Scrutton said that a single sale not conducted by the chemist himself (or by some other duly registered chemist) would not be enough to expose the chemist to a penalty for breach of the section. How many sales would be enough for the purpose was a question of degree and therefore a question of fact for the county court judge to decide. The county court judge had made his decision; there was some evidence on which he could base it, and he had made no error in law; consequently the Court of Appeal would not interfere. A man, observed the Lord Justice, could conduct his business without personally carrying out every act which formed part of the business. The observation is undeniable, of course, as a matter of general commercial practice; but, after all, Parliament did treat the retailing of poisons as a transaction requiring special supervision by specially qualified persons. Lord Justice Lawrence agreed with Lord Justice Scrutton in dismissing the appeal, but a dissenting judgment by Lord Justice Greer may encourage the Society to pursue the matter further.

CORRESPONDENCE

ANÆSTHESIA FOR OPERATIONS ON THROAT AND MOUTH

To the Editor of THE LANCET

SIR,—In your notes on Medicine and the Law of July 23rd (p. 206) you state that "unless anyone is prepared to denounce the modern operation (of tonsillectomy) he cannot fairly criticise the anæsthesia it involves." As it has been for years my teaching to do so when it is practised on young children, I am glad that my friend, Mr. E. Watson Williams, has drawn attention to those notes in your last issue (p. 268).

The operation of tonsillectomy demands so high a degree of elasticity that it is doubtful whether agreement in detail is either possible or desirable, but certain principles may be considered axiomatic. Thus the danger which any operation entails to life must be compatible with the benefit that will accrue from it. If we apply this to the surgery of the throat, we may demand that blood be not allowed to flow in the pharynx except in the presence of a protected larynx. In the adult such protection may be afforded "by the position of the patient" when the head is allowed to fall far back. Personally I consider that in addition the larynx should be further protected by an intratracheal tube for delivery of the anæsthetic; but I deny that position alone is sufficient protection in a child so small that the tonsils cannot be removed in the presence of such a tube.

Even without blood in the pharynx, to keep a child under an anæsthetic long enough to perform "the complete deliberate removal of tonsils as carried out to-day" at the "degree of narcosis" demanded in your notes is by itself a risk incompatible with the benefit to be gained by the operation. We must remember that if the surgeon demands "an absence of all gagging and a perfectly immobile pharynx," he is asking for "a degree of narcosis" beyond that "in which the laryngeal reflex is always abolished." It is a degree of anæsthesia to which a child should only be submitted if suffering from a lesion that is itself lethal and demands such a depth of anæsthesia for its relief. We must further remember that the lesion for which tonsils are removed is never this. Under the age of 5 it is always debatable whether the operation is advisable; over 5 the child enters on an age where it may be advisable but where it is never a matter of immediate necessity. It is not until the age of 12 or more that the tonsils have developed a degree of sepsis so harmful to the individual that their removal is imperative. Below this age a method should be chosen whereby if the laryngeal reflex is lost before the beginning of the operation the administration of the anæsthetic is stopped, and if resort is again had to it, it is not pushed to a degree that will allow the loss to recur. After the age of 12, if a method of operation is necessary that requires the "degree of narcosis" under discussion, the pharynx is big enough to admit the necessary manipulations being carried out in the presence of an intratracheal tube.

But the advocates of the method you mention are not performing "the" modern operation. They have stayed still in the year 1907. In 1911 another "modern" operation was devised by the reversal of the guillotine, whereby the tonsils can be removed as completely and more cleanly than by any method of "complete deliberate removal," which I interpret to mean the method of tonsillectomy by dissection. With some modified guillotine, of which many patterns are on the market, the great majority of all tonsils can be removed. There remain only those cases in which recurring peritonsillitis has so bound down the tonsil that it cannot be delivered into the ring of the guillotine. These cases do not occur in childhood. In adult life there may be no increase of risk to remove the tonsils by the dissection method than by that of the blunt guillotine. In the child, however, there can be no comparison between the safety of the two methods, and to say that "complete removal of the tonsils cannot be properly carried out without a degree of narcosis that involves abolition of the laryngeal reflex" is to be ignorant of modern methods.

I wish therefore to support Mr. Watson Williams in his denunciation of any such operation as you infer, on the ground that in childhood one can "fairly criticise the anæthesia it involves."

I am, Sir, yours faithfully,

Guy's Hospital, S.E., July 30th, 1932. T. B. LAYTON.

To the Editor of THE LANCET

SIR,—Mr. Watson Williams's letter recalls the very extensive correspondence in your columns on the arrest of bleeding after tonsillectomy. Surely the crux of the whole matter is the need in this type of operation for skilled anæsthesia. The anæsthetist should be prepared to maintain the anæsthesia for just exactly as short or as long a time as the individual case requires, and to lighten or deepen the effect at will. Though light anæsthesia is desirable there can be no effective "rule" as to depth, duration, or preliminary medication, and it is surely wrong in principle that an operator should time his work or adapt his methods to a particular kind of anæsthesia.

In my view there are three important principles to be observed in *all* mouth operations :—

1. The operator should know that he can take as long as he likes. If he works quickly so much the better, but he should not be *compelled* to hurry his work.
2. The operator must have a clear and uninterrupted view of the field of operation. This means that the anæsthetist should be prepared to prolong the anæsthesia if and as required by means of a vapour driven through a tube hung over the edge of the mouth, attached to a special gag, or passed down the nose, and not by a mask or cloth placed over the mouth.
3. Bleeding must be controlled. Its occurrence may prolong considerably the duration of the anæsthesia.

I am not sure that it is desirable to maintain an *active* cough reflex. Expulsive coughing is frequently followed by a drawback of air with widely opened larynx, and I know of at least one case where an adult patient, almost completely round from the anæsthetic, died from blood inhaled in this way following tonsillectomy. On the other hand, though the cough reflex is better diminished I do not like to see it completely abolished ; this only occurs during deep anæsthesia, and deep anæsthesia is particularly to be avoided whenever there is the slightest risk of obstruction.

Though mouth operations often prove to be trivial the potential risks are very grave, and there can be no doubt that the difficulties and anxieties of the surgeon can be much relieved by good anæsthesia.

I am, Sir, yours faithfully,

Dundee, July 30th, 1932. A. H. MACKLIN.

STREPTOCOCCAL SEPTICÆMIA

To the Editor of THE LANCET

SIR,—Dr. Burton's letter in your issue of July 23rd raises points which must be answered. He doubts that my two cases of streptococcal septicæmia were primarily influenzal. The evidence was so overwhelming that I stated as a fact that they occurred in an epidemic ; actually 34 out of a community of 36 were within a few days attacked by mild nasopharyngeal symptoms, with occasionally headache, backache, or gastro-intestinal disturbances, with no special causative organism except the streptococcus as a secondary invader. Whether the streptococcus invades the sufferers on the first day as in Case 2, on the eighth day in Case 1 of my paper, or on other days as occurred in several other cases does not alter the fact that the cases were primarily influenza. If further proof that Case 2 was influenzal is required the blood count supplies it. A leucopenia of 5000 cells per c.mm. (66 per cent. polymorphs) is consistent with influenza but not with streptococcal septicæmia.

The reason for stating that a localisation in the lung or pleura, or in fact in any serous cavity except the meninges, is of good prognosis is that an analysis of the cases published by Dr. Ryle and myself [1] demonstrates it. The figures are not large but they were 30 unselected cases. Two of the 13 who survived had a localisation in the lung or pleura ; whereas of the two out of the 17 fatal cases who had localisation in the lung, one had severe diabetes and one had meningitis as well. The lung is only one of the localising places. Careful study of the remaining cases convinces me that the prognosis is improved if the septicæmia localises, and this agrees with the teaching I have always received. I attribute the fatal result of my own case to the fact that he had influenza as well. Dr. Burton must also take into account, when trying to assess the value of serum in Rosher's four cases,[2] that in three of them there was localisation—in the arm, in the deltoid (from the uterus), and in the pleura—while in the remaining case serum was given later (day uncertain from the description, but probably about the twelfth day).

I am not greatly disturbed by the knowledge that Dr. Burton does not see eye to eye about streptococcal antitoxins, but I protest against the totally unjustifiable inference contained in the last paragraph of his letter that my views would be against the administration of a highly specific antibacterial as well as antitoxic serum. Such a serum I will certainly use when it is discovered. Until then I shall use judgment, giving antitoxic serum only in those cases which for some special reason have had their resisting powers temporarily lowered ; and I shall from the first do all that is possible to help the patient to develop his own antibacterial defences, which at present are the only ones available to defeat the organism in vivo.—I am, Sir, yours faithfully,

Rugby, July 30th, 1932. RONALD E. SMITH.

[1] Guy's Hosp. Rep., 1931, lxxxi., 1.
[2] Ibid., 1930, i., 130.

PROF. HEY GROVES AND THE MEDICAL DEFENCE UNION

To the Editor of THE LANCET

SIR,—I understand that it has come to the knowledge of a section of the profession that certain misunderstandings and differences arose between the Medical Defence Union and myself as the result of which it was decided that I should place my defence in the hands of my own solicitor in the recent legal action in which I was involved.

I am asking you to insert this letter in order that it may be known as widely as possible that these misunderstandings have now been completely cleared up, and that the Medical Defence Union has acted fairly and generously in assuming responsibility for the whole of the heavy costs involved in my successful defence.

It was impossible to recover these costs from the plaintiff, and in the absence of the Union's action they would have been my liability.

I am, Sir, yours faithfully,

Clifton, Bristol, July 27th. ERNEST W. HEY GROVES.

MENTAL HEALTH IN RELATION TO EDUCATION

To the Editor of THE LANCET

SIR,—At the recent meeting of the Section of Mental Disorder, the officers of the section invited Mr. Cuthbert Blakiston, headmaster of Lancing College, to take part in the discussion on Mental Health in Relation to Education. A great deal of publicity has been given to Mr. Blakiston's contribution to the discussion, but it is unfortunate that owing to important phrases having been omitted some of those which are published convey a different meaning to that which would have been conveyed had they not been separated from the context of his speech. As a result, the headmaster's personal experience of the abnormal in school life has in certain cases been made to appear as his experience of the normal. Many people have drawn erroneous conclusions from reading these reports, and it is hoped that this letter may help to correct such impressions.—We are, Sir, yours faithfully,

MAURICE CRAIG,
President of the Section of Mental Disorder, B.M.A. Centenary Meeting.
G. W. B. JAMES, M.D.,
J. R. REES, M.D.,
July 30th. Hon. Secretaries, Section of Mental Disorder.

PUBLIC HEALTH SERVICES

SCHOOL MEDICAL SERVICE

—	No. on roll.	Average attendance.	Routine inspection.	Special examinations and re-inspections	Percentage of defects.
Warwickshire ..	36,300	33,125	10,212	9,210	23·1
City of Leeds..	76,331	—	17,128	63,040	34·5
County of Norfolk..	43,745	39,586	1,869	948	19·20

Warwickshire

Dr. A. H. Wood says the past year has been one of economy and retrenchment, all idea of progress being set aside, but there has been no curtailment of activities and the lull has afforded opportunity of stock-taking. Nevertheless, Dr. Wood and his staff have made such good use of available facilities that in nearly all directions results are better than in previous years. The diligence of the nursing staff has been rewarded in the improvement in cleanliness, the percentage of verminous children being only 7·4 compared with 9·9 last year, and the reduction in the prevalence of scabies by one-half since 1928 being recorded. Cases of impetigo have fallen from 865 to 782 in the year. In dental treatment there is improvement, but the percentage of acceptance is still low, 32·7 as compared with 63·4 for the whole country. One of the dentists, Dr. S. P. Meacock, L.D.S., regretting this fact adds :—

"It must be remembered that cases reported treated by us, with few exceptions, are cleared of all unsavable teeth and all savable teeth filled or prophylactically treated; whereas it is unfortunately common practice throughout the country to remove only painful teeth or to carry out the fillings of one or two of the more obvious cavities, a policy calculated to pander to the lay idea of dentistry in the past decade and so swell the percentage of those accepting treatment."

Several of the dentists believe that the fee of 1*s.* required from the patients acts as a deterrent and suggest a reduction to 6*d.* as in Gloucestershire and Worcestershire, or that the 1*s.* should cover all further treatment during school life. The orthopædic service, commenced in a small way in 1928, now covers the whole area of the education and child welfare county; 75 cases received hospital treatment and in addition 20 cases were treated at the Paybody Convalescent Home, Allesley. Mr. P. R. Marsh, organiser of physical training, records an all-round improvement in the teaching of the subject, with the gratifying result that the shuffling slouching gait so common with boys is fast disappearing, and the majority of girls carry themselves really well. But we must continue, he adds, to exert our influence towards the prevention of round backs, poking chins, and the more prevalent hollow backs due largely to poor sitting positions.

City of Leeds

Dr. E. St. Clair Stockwell pays a tribute to his predecessor Dr. A. E. L. Wear, of whom he says :—

"During the period of over 21 years he has nursed his department through its infancy and childhood. He leaves it in healthy adolescence, well developed and well nourished, with a staff of doctors, specialists, dentists, nurses, masseuses, and clerks, second to none in the country. The ever-widening influence exercised by the School Medical Service—not only from the remedial work carried out on behalf of the children, but also by the inculcation of hygienic habits that permeate the homes and tend to raise the general standard of life—more than justifies the efforts which he has made."

The percentage of children found to require treatment, always high in Leeds mostly due no doubt to searching methods of ascertainment, shows a slight increase (0·2); it is highest in the 8-year group, partly because at this age defective vision is first completely dealt with. An investigation of the vision of children between 7 and 8 revealed the fact that out of 4822 children of this age 10 per cent. were found by the ordinary methods to require glasses, and using special methods an additional 18·7 per cent.—i.e., 28·7 in all. It was felt that some procedure must be devised for finding children with defective vision at still earlier ages, and a special inquiry on 750 children from 4 to 6 showed that at 4½ nearly all could recognise the forms of the letters though they could not name them. Details are not given. In other areas use is made of the E (or better of the U) test and sometimes of the device of telling the child to copy the letters. Picture test cards are obsolete. Another inquiry on 670 children of 7 to 14 established the fact that myopia increases on the average by 0·45 D for the right eye and 0·47 D for the left eye.

Dental work is developing, 13 per cent. more children being treated than last year, but the dental staff needs increasing. The dental officers are unanimous that about half the children who attend as casuals are under 6, and they view with dismay the number of 6-year old molars they are compelled to extract. Even children of 3–4 years are presented at the clinic needing extraction. No scheme of dentistry amongst children will, they feel, ever progress towards the ideal if these teeth, which are the foundation and key of all the work, are not saved. Education in dental hygiene is needed. Dental competitions created interest but some schools were not represented. On the subject of orthopædics, Mr. S. W. Daw, F.R.C.S., praises the keenness of the school medical service in detecting early signs of deformities and the excellent preliminary work of the infant welfare centres. If attendance at these was compulsory, very few cases would, he thinks, escape attention. Dr. Stockwell remarks that while wider powers of securing attendance at the centres might prove a hardship to some parents, there is no doubt of the beneficial effect on the coming generation. There must of course be exemption for cases under the regular care of the family doctor. The measures taken for the care of rheumatic heart infection, for the treatment of stammerers, for the nutrition of the children, and the forthcoming opening of a fine open-air school, are all signs that the education authority has, in Dr. Stockwell's phrase, "the aim of handing over its product to the community well provided for life both in body and mind."

County of Norfolk

Dr. T. Ruddock-West records the appointment of a consultant aurist, an agreement with Norwich City for the X ray treatment of ringworm, and an arrangement with the Norfolk and Norwich Hospital for the admission of children needing dental treatment under a prolonged general anæsthetic. His report contains examples of how school medical work is modified in a large rural area. With infectious diseases in towns, school closures are almost obsolete, and contacts are excluded for short periods and kept under observation, since the children are likely to meet so much outside the schools that exclusion is useless. In Norfolk 63 schools were closed in 1931 with a loss of 337 school days; while 9484 children were temporarily excluded, nearly a quarter of the whole school population. The lack of isolation hospital accommodation in the county affects the attendance of home contacts to a large extent, and in the majority of cases children who have not contracted the disease have to remain excluded for as long a period as the actual sufferers. In the provision of treatment several expedients have to be employed; one that works well is the dental van with which the schools are visited and treatment carried out on the spot—a new van, a motor trailer, with complete fittings, including a 20-gallon water tank. This is an excellent device

where several little village schools are remote from any town. Some facilities are provided by the authorities of neighbouring towns, such as Norwich, but orthopædic cases have also to go to Pyrford (Surrey) and Ascot (Berkshire), while advice and assistance are given by a visiting orthopædic nurse. In places far from clinics the school nurse often treats cases of minor ailments at the school or in the child's home.

MENTAL HOSPITAL REPORTS

THE CUMBERLAND AND WESTMORLAND MENTAL HOSPITAL had 848 patients on its books on the last day of last year; four of the 115 patients admitted came on a voluntary basis. The recovery-rate for the year was 25·8 per cent., and the death-rate 8·5 per cent. There were two cases of paratyphoid fever, but it was not possible to trace the origin of the infection. The incidence of phthisis has decreased. Owing to the lack of funds it has been impossible to proceed with the building of an admission block. The hospital is not overcrowded, but the present arrangements make it difficult to classify patients satisfactorily. The medical superintendent is working out a scheme for subdividing the present admission wards so that the noisy and turbulent may be segregated from the quiet and apprehensive patients. During the year an attempt was made to institute occupational therapy, the charge nurses in each ward being instructed in raffia work, basket-making, and embroidery. The results have already been little short of amazing, especially in the noisy wards. Another valuable innovation is an agreement with the Cumberland Infirmary for the part-time service of its pathologist and pathological department. It is hoped soon that an out-patient clinic may be held at the infirmary, and later on at other places throughout the two counties. Parole on the estate has been granted to 35 men and 2 women and within the estate to four patients of each sex. A new operating theatre and dental room are being built. Two cases of general paralysis have been treated by malarial therapy.

The EAST RIDING MENTAL HOSPITAL, at BEVERLEY, had 637 patients at the end of March, 1932. The admission-rate for the year was the lowest since 1899; nine patients were admitted voluntarily. The recovery-rate was 47 per cent., and the death-rate 4·57 per cent. Autopsies were performed whenever permission was granted—i.e., in 93 per cent. of cases. Tryparsamide is used for general paralysis. The dentist visited 22 times and saw 166 patients. A large number of men are allowed parole. A ward on the male side has been converted into an admission ward, and the nurses' home and laboratory have been completed. In view of the financial situation the committee has not proceeded further in the matter of obtaining a supply of electricity. Of the male staff 54 per cent., and of the female 18 per cent., hold the certificate of the Royal Medico-Psychological Association.

INSTITUTION FOR THE MENTALLY DEFECTIVE

The report of the ROYAL EASTERN COUNTIES' INSTITUTION, at COLCHESTER, records another successful year of work, despite the trying financial position. There were 132 admissions during the year 1931 and 77 discharges. The death-rate was 1·13 per cent., very nearly the lowest on record. The tuberculosis death-rate was 0·42 per cent.; at the beginning of the year 13 patients were under treatment for various forms of tuberculosis, and six new cases or relapses occurred, seven remaining under treatment at the end of the year. X ray photographs were taken in 25 cases to determine the presence of a fracture or of pulmonary tuberculosis. There was a mild outbreak of influenza in the spring, and two epidemics of whooping-cough which were successfully stopped by inoculation. The use of the Schick test and the immunisation of all positive reactors have been continued, with very satisfactory results. The average daily number of patients on the register was 1414—over a thousand more than 21 years ago.

The two research investigators began their work early in 1931, and have already made very satisfactory progress. Each patient has been subjected to very careful clinical examination, the personal and family history has been thoroughly investigated, and the statements of relations and friends have been carefully checked. The medical superintendent puts forward a provisional opinion, for which the research department is not to be held to account, that the number of cases of mental deficiency about which a definite ætiological opinion can be given is less than 20 per cent. of the whole. Some 10 per cent. are due to a secondary cause like poisoning, disease or injury, and perhaps 5 or 10 per cent. to heredity alone. Apparently for the majority of defectives heredity and environment are both responsible. Three papers have already been published: on the position in family of mental defectives; on a physical sign in the hand of Mongolian imbeciles; and on the blood-groups of Mongolians. In addition, work has been done on congenital syphilis of defectives and on the average grade of defect amongst different social classes. Apparently, between 5 and 25 per cent. of the patients tested had suffered from congenital syphilis, but the matter is to be further investigated. The intelligence of defectives in an institution is on the average lowest amongst defectives born into the professional classes, and gradually rises as the defective comes from a lower social class. The inference from this is that defectives in the upper social classes are due to secondary causes, generally gross brain damage. Defectives in the lower social classes are of much the same intelligence as the rest of their class which is carrying on in the outside world; their presence in an institution is accidental, due to some environmental factor which has led them into anti-social courses.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 23RD, 1932

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 10 (last week 37); scarlet fever, 1303; diphtheria, 739; enteric fever, 60; acute pneumonia (primary or influenzal), 475; puerperal fever, 36; puerperal pyrexia, 64; cerebro-spinal fever, 34; acute poliomyelitis, 7; encephalitis lethargica, 10; dysentery, 13; ophthalmia neonatorum, 96. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 26th–27th was as follows: Small-pox, 39 under treatment, 4 under observation; scarlet fever, 1362; diphtheria, 1359; enteric fever, 18; measles, 833; whooping-cough, 408; puerperal fever, 34; encephalitis lethargica, 229; "other diseases," 107. At St. Margaret's Hospital there were 21 babies with ophthalmia neonatorum.

Deaths.—In 117 great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 29 (7) from measles, 5 (2) from scarlet fever, 25 (5) from whooping-cough, 17 (3) from diphtheria, 39 (15) from diarrhœa and enteritis under two years, and 16 (3) from influenza. The figures in parantheses are those for London itself.

The fatal cases of enteric fever were reported from Liverpool and Nottingham. Of the deaths from measles, 9 were reported from Liverpool, 2 each from Gateshead, Wigan, and Stoke-on-Trent. West Hartlepool reported 3 deaths from whooping-cough.

The number of stillbirths notified during the week was 264 (corresponding to a rate of 37 per 1000 total births), including 35 in London.

TAXATION OF A HOSPITAL PAGEANT.—The pageant which was held a year ago for the benefit of Tewkesbury Hospital has realised a profit of £700. Twelve months have been occupied in negotiations with the Inland Revenue authorities, who, after demanding a large sum for entertainment tax, have finally agreed to make no claim.

PANEL AND CONTRACT PRACTICE

London Panel Committee

AT a meeting of this committee held on July 26th the chairman, vice-chairman, and treasurer were re-elected. The chairmanship involves much work and time in the service of the committee; the present chairman has been in office some 19 years, and has conducted the business of the meetings with capacity, insight, and skill, but it is doubtful whether this continuity in office is really good for the committee. The majority of its members appear to think that whilst a member is willing to remain in office, and there is no good reason for change, he should continue to be re-elected—the standing orders require an election each year—but from the point of view of the training of its members to be efficient in panel affairs with experience on outside bodies it does appear advisable that retirements should take place at intervals. This would provide that other members of the committee, who have had the experience of being chairmen of subcommittees, could bring their knowledge and experience more directly to bear, thus confirming the committee as a strong body. The wisdom of the chairman of to-day would still be available under his successor.

A visit to a corpse.—The committee discussed at some length an emergency case in which a message was received asking a doctor, who was out and not likely to be back for an hour or two, to go to visit a dead man. The messenger was directed to call in another doctor who was told the patient was unconscious. He visited and claimed an emergency fee. Legally a man who is dead is no longer "on the panel," but the committee decided that there was a moral duty to go to such cases and they allowed the emergency fee.

Causes of dissatisfaction.—The organising and assistant medical secretary reported that during the last quarter he had interviewed 210 doctors, including 16 who had recently joined the panel. He had visited, at the request of the insurance committee, all of the 12 doctors who had failed, on request, to send in medical records; 360 of these records had now been returned. The most frequent complaints he receives are these: (1) undue interference with patients by sickness visitors; (2) the continued unsatisfactory position in the matter of certification of pregnant women; (3) presentation by an insured person of a card which secures him treatment, possibly for some weeks, at the end of which the card is returned marked "not entitled to benefit."

London Insurance Committee

The meeting of the committee on July 28th was again chiefly occupied with "cuts" in staff salaries, the Ministry of Health having sent a sharp instruction. In the case of persons who are undergoing treatment in an institution Section 17 of the N.H.I. Act, 1924, specially prohibits the payment of benefit to a workhouse, poor-law infirmary, asylum, or other similar institution maintained out of public funds. This is held by the Ministry to preclude the payment of benefit either directly or indirectly to such an institution. It may be mentioned, however, that the Poor-law Act, 1927, by Section 76, compels a public assistance committee to ignore at least 5*s*. of benefit from a friendly society and to ignore benefit under the N.H.I. Act to the extent of 7*s*. 6*d*. per week.

The committee decided to consult with the panel committee before coming to a decision about the employment of an assistant by a practitioner who practises in Stoke Newington and has acquired another practice in the borough of Southwark, which has brought the number of insured persons on his list above the statutory maximum without the employment of an assistant. The two surgeries are four miles apart. The difficulty is again arising over what is meant by personal service.

On the question of psychotherapy the committee decided to disagree with the opinion of the local medical committee on the ground that the committee are not satisfied that psychotherapy should be recognised as an established form of treatment outside the scope of the obligation of an insurance practitioner under the terms of service.

It was reported that a court of referees had decided that thermogene wool was not a drug nor an appliance forming part of medical benefit.

OBITUARY

HAROLD LOW, M.B. Camb.

Mr. Harold Low, who died on July 26th at his residence at Stoke Park, was the son of Mr. Stephen Philpot Low, J.P., D.L., and was educated privately and at Gonville and Caius College, Cambridge. He went on to St. Thomas's Hospital, taking both the conjoint qualification and his Cambridge medical degree in 1890, after which he held a number of posts at St. Thomas's, including those of house physician, resident accoucheur, and clinical assistant in the skin department. He then went as assistant to the South-Western Fever Hospital, and after some voyages in tropical seas, returned to become anæsthetist at the West End Hospital for Nervous Diseases and the National Dental Hospital, until his appointment as anæsthetist to St. Thomas's. In the course of time this led to his appointment, in succession to Sir Frederic Hewitt, as anæsthetist to the Royal Household. During the war he was attached to the 5th London General Hospital with the rank of Captain R.A.M.C., T.F. Later he was elected to be president of the Anæsthetics Section of the Royal Society of Medicine. One of his colleagues writes: "Harold Low was a mixture of shrewdness and geniality, with an attractive personal appearance of health, vigour, and good nature. As an anæsthetist he was sound without being in any way progressive, and he was a good dogmatic teacher of students. His goodheartedness was shown by the fact that he was chairman of the London Committee of Caius College Mission and Settlement in Battersea."

FRANCIS BURCHETT RUTTER, M.D. Durh., F.R.C.S. Eng.

Dr. Francis Rutter, who died on July 17th after an operation on the previous day, spent the greater part of his life at Mere, Wilts, where he was born in 1869. He was educated at Sidcot School and the London Hospital, spending a year at Newcastle, when he took the first place in honours at the M.B., B.S. Durham. Returning to London he held resident appointments at the London Hospital and the London Temperance Hospital, before taking up the general

practice in Wiltshire, which extended over a wide and thinly populated district. For many years he was chairman of the parish council, a county magistrate, school manager, and chairman of the local small-holders' association, one of the first of its kind. A keen Liberal, he was also an active temperance and peace worker and, since his retirement two or three years ago owing to eye trouble, had devoted most of his time to platform speaking. He leaves a widow and four children.

MEDICAL NEWS

Royal College of Physicians of London

At a quarterly Comitia of the College held on July 28th, Lord Dawson, the president, in the chair, the following Fellows of the College were elected officers for the ensuing year:—

Censors: Dr. R. A. Young, Dr. G. F. Still, Prof. Arthur J. Hall, and Sir Thomas Horder. Treasurer: Dr. S. P. Phillips. Registrar: Dr. Raymond Crawfurd. Harveian Librarian: Dr. Arnold Chaplin. Assistant Registrar: Dr. R. O. Moon. Library Committee: Dr. C. J. Singer, Dr. Anthony Feiling, Dr. J. D. Rolleston, and Dr. A. E. Clark-Kennedy. Curators of the Museum: Dr. H. R. Spencer, Dr. S. E. Dore, Dr. Maurice Davidson, and Dr. Harold Gardiner-Hill. Finance Committee: Sir Percival Horton-Smith Hartley, Dr. Robert Hutchison, and Sir Charlton Briscoe.

The following were elected Examiners:—

Chemistry: Mr. Herbert Lambourne and Mr. W. B. Tuck, D.Sc. Physics: Mr. W. H. White and Mr. F. L. Hopwood, D.Sc. Materia Medica and Pharmacology: Dr. Philip Hamill, Dr. K. D. Wilkinson, Prof. J. A. Gunn, Dr. E. Gordon Holmes, and Dr. Orlando Inchley. Physiology: Prof. Joseph Barcroft and Prof. R. J. S. McDowall. Anatomy: Prof. Duncan M. Blair. Pathology: Dr. C. E. Lakin, Dr. George Graham, Prof. Matthew J. Stewart, and Dr. H. W. C. Vines. Medical Anatomy and Principles and Practice of Medicine: Dr. David Forsyth, Dr. H. Theodore Thompson, Dr. E. A. Cockayne, Dr. Reginald H. Miller, Dr. E. P. Poulton, Dr. Albert Ramsbottom, Sir Stanley Woodwark, Dr. A. C. D. Firth, Dr. E. Bellingham Smith, Dr. L. S. T. Burrell, Dr. Ivor J. Davies, and Dr. J. W. McNee. Midwifery and Diseases peculiar to Women: Mr. J. P. Hedley, Mr. J. B. Banister, Mr. D. W. Roy, Prof. Daniel Dougal, and Mr. A. C. Palmer. Public Health: (Part I.) Dr. G. Roche Lynch; (Part II.) Dr. G. F. Buchan. Tropical Medicine: Prof. R. T. Leiper (Pathology and Tropical Medicine), and Dr. N. Hamilton Fairley (Tropical Medicine and Surgery). Ophthalmic Medicine and Surgery: Dr. W. J. Adie. Psychological Medicine: (Part I.) Dr. R. D. Gillespie; Part II. Dr. S. A. Kinnier Wilson, and Dr. A. A. W. Petrie. Gynæcology and Obstetrics: Prof. J. M. Munro Kerr. Laryngology and Otology: Mr. Lionel Colledge. Radiology: Mr. J. H. Brinkworth (Physics), and Dr. H. K. Graham Hodgson (Radiology).

The Bisset Hawkins gold medal was awarded to Dr. T. H. C. Stevenson for his valuable work when superintendent of statistics in the office of the Registrar-General. The President announced that the Leverhulme scholarships had been awarded to Stanley J. Hartfall, M.R.C.P., and John Fleming Brock, M.R.C.P. The Murchison scholarship was awarded to G. H. Newns, M.B., of King's College Hospital Medical School.

The following appointments were announced:—Sir Thomas Lewis as Harveian Orator, 1933 (the forthcoming Harveian Oration in October next will be delivered by Sir George Newman); Sir Humphry Rolleston as FitzPatrick lecturer, 1933; Dr. C. S. Myers as Bradshaw lecturer, 1933; Dr. C. R. Box as Lumleian lecturer, 1933; Dr. C. E. Newman as Goulstonian lecturer, 1933; Dr. E. A. Carmichael as Oliver-Sharpey lecturer, 1933; Dr. W. G. Savage as Mitchell lecturer, 1933; and Prof. O. L. V. S. de Wesselow as Croonian lecturer, 1934.

Dr. James Collier was appointed the College representative on the National Florence Nightingale Memorial Committee.

The following candidates, having satisfied the Censors' Board, were admitted Members of the College:—

Ghulamahmad Niazmohammad Ahmadi, M.B. Bomb.; Simon Behrman, L.R.C.P.; Harold Walter Benham, M.B. Lond.; Albert Harold Godwin Burton, M.D. Lond; John Egerton Caughey, M.B. N.Z.; Judson Tyndale Chesterman, L.R.C.P.; Jack Dinham Cottrell, M.B. Sydney; Gerald Henry Davy, M.D. Camb.; Geoffrey Duckworth, L.R.C.P.; Theodora Clemens Easterfield, M.B. N.Z.; Sayid Abdel Kader Effat, M.D. Cairo; Richard Huxley Fish, L.R.C.P.; Michael Scott Montague Fordham, M.B. Camb.; Frank Forman, M.B. Aberd.; Philip Rutland Graves, L.R.C.P.; Gilbert Steward Hall, M.B. Birm.; Eric Oates Halliwell, L.R.C.P.; Thomas Frederick Hewer, M.D. Brist.; Leonard Haydn Howells, M.B. Lond.; Alfred Thomas Lock Kingdon, M.B. Lond.; Julius Libman, M.D. Liverp.; George Roderick Marcano, M.D. Lond.; John Henry George Mason, M.B. Lond.; George Henry Newns, M.B. Lond.; William Drew Nicol, M.B. Lond.; Christopher Robert L'Estrange Orme, L.R.C.P.; Gerald Eustace Peacock, L.R.C.P.; Norman Swift Plummer, M.B. Lond.; Edward Tobias Renbom, M.B. Lond.; David Braham Rosenthal, M.D. Melb.; Harley Edward Stevens, M.B. Sydney; Aldwyn Brockway Stokes, L.R.C.P.; George Mellor Tickler, L.R.C.P.; Henry Ashbourne Treadgold, M.D. Lond.; Dagmar Florence Curjel Wilson, M.D. Glasg.; and Ian Jeffreys Wood, M.D. Melb.

Diplomas of L.R.C.P. were conferred upon 159 candidates (138 men and 21 women) who have passed the final examination of the conjoint board and complied with the by-laws of the College. The following are the names and medical schools of the successful candidates:—

Towhida Abdel-Rahman, Royal Free; H. Ackers, M.B. Liverp.; R. W. F. Alles, Ceylon and Middlesex; F. C. Angior, Liverpool; H. Barcroft, Camb. and St. Mary's; V. H. Barnett, Univ. Coll.; W. N. W. Barns, Univ. Coll.; C. H. Bateman, St. Bart.'s; C. G. Batty-Smith, Camb. and St. George's; F. H. Bentley, M.B. Manch.; R. H. Berry, Univ. Coll.; F. R. Bettley, Univ. Coll.; G. A. Betts, St. Mary's; R. N. Bhatia, Camb. and St. Bart.'s; J. D. H. Bird, King's Coll.; S. E. Birdsall, Camb. and St. Bart.'s; R. N. Biswas, M.B. Calcutta and Univ. Coll.; J. R. Blackburne, St. Bart.'s; Marjorie Bolton, Royal Free; C. P. F. Boulden, Camb. and London; T. Bromberg, St. Mary's; Ethel D. M. Brook, Royal Free; D. G. W. Brown, M.B. Liverp.; L. I. S. Campbell, Camb. and Guy's; B. Cates, St. Bart.'s; B. Chandra, M.B. Bomb., King's Coll.; J. W. Cheetham, Liverpool; A. H. Chenard de la Giraudais, Charing Cross; S. J. Chesser, Camb. and St. Thomas's; T. A. Connold, St. Thomas's; Gwendolen N. Cook, Camb. and Royal Free; P. T. Cooper, Camb. and St. George's; A. C. Cox, Oxford and Guy's; C. F. Cumings, King's Coll.; J. Cunard, Cape and Guy's; Anna V. K. Cyriax, Univ. Coll.; Phyllis E. Dain, Birmingham; D. T. Davies, Cardiff and St. Bart.'s; W. H. D. Davies, St. Bart.'s; S. C. De, Calcutta and Middlesex; A. K. Deb, M.B. Calcutta and Univ. Coll.; L. W. B. Dobbin, Camb. and London; N. M. Durrani, Punjab and London; R. M. Ebeid, Birmingham; F. R. Edwards, M.B. Liverp.; M. H. Evans, Oxford and Middlesex; W. J. M. Evans, Cardiff; T. B. Field, Univ. Coll.; R. J. K. Fleming, London; F. E. Fletcher, M.B. Brist.; D. H. Fulton, King's Coll.; A. H. Galley, King's Coll.; D. W. C. Gawne, Camb. and St. Bart.'s; P. A. I. Gorer, Guy's; C. H. Gray, Manchester; N. Green, Univ. Coll.; Phyllis N. Greene, Royal Free; A. K. Guha, M.B. Patna and Manchester; M. A. F. A. Hadi, Birmingham; M. Hafezi, Beirut and St. Mary's; J. Halperin, St. Bart.'s; R. J. C. Hamilton, St. George's; J. C. Hardy, Univ. Coll.; K. W. Hardy, London; E. R. Hargreaves, Camb. and St. Mary's; J. B. Harman, Camb. and St. Thomas's; L. P. Hodgson, Birmingham; J. S. Horsley, London; T. G. Hovenden, Oxford and St. Thomas's; J. Howkins, Middlesex; M. G. H. Hughes, London; W. Hunt, Camb. and St. Bart.'s; A. D. Iliff, St. Bart.'s; Ursula Y. im Thurn, Univ. Coll.; E. James, Leeds; J. R. E. James, Cardiff and London; W. L. James, Guy's; C. G. Jones, Middlesex; J. E. Jones, Liverpool; Katherine M. Jones, Royal Free; W. W. Jones, Guy's; N. Katz, St. Bart.'s; B. S. Kaushal, M.B. Punjab, Middlesex; Anges V. Kelynack, Royal Free; G. W. Kendrick, St. Thomas's; M. Klass, Witwatersrand and St. Mary's; L. O'N. Knox, Cape and Guy's; C. B. Lanyon, Univ. Coll.; Annie Lawson, Leeds; Z. Lefkovitz, Cardiff; A. R. R. Le Fleming, Camb. and St. Thomas's; Gladys A. R. Lenanton, Royal Free; Peggy Levi, M.B. Birm.; P. Lewis, Leeds; R. S. Lewis, Camb. and St. George's; L. H. B. Light, Camb. and St. Thomas's; S. Livni, London; T. E. S. Lloyd, Camb. and St. George's; J. L. Lovibond, Camb. and Middlesex; M. J. F. McArdle, Guy's; J. C. McGregor, Charing Cross; Mary A. McKean, Royal Free; J. D. Macleod, St. Thomas's; H. A. Magnus, St. Bart.'s; R. A. Manclark, Middlesex; J. I. Maran, Univ. Coll.; Lois M. Marris, Birmingham; Gwendolen E. Matthews, Westminster; F. S. A. Maw, Camb. and King's Coll.; R. V. F. Mercer, Camb. and St. Bart.'s; G. A. Miller, Camb. and Guy's; M. A. N. Moezuddin, Lucknow and St. Thomas's; W. H. W. Morris, St. Thomas's; Edith A. Muirhead, Royal Free; J. de C. Muller, St. Thomas's; R. B. Munro, Cardiff and Univ. Coll.; W. T. North, Guy's; H. E. Offord, St. George's; T. G. Osler, Cape and St. Mary's; G. H. C. Ovens, St. Mary's; J. W. M. Owen, Cardiff and St. Mary's; J. S. Parkinson, Manchester; R. E. J. Pewbrey, St. Thomas's; S. H. B. Platts, Camb. and Leeds; G. A. Powell Tuck, Birmingham; A. Rashid, Punjab and West London; G. R. C. Rayner, Camb. and Guy's; H. G. Rees, Middlesex; T. G. Richards, Liverpool; A. E. G. Ridgway, L.M.S.S.A., London; D. F. Robb, St. Thomas's; A. Rothwell, Camb. and King's Coll.; E. Rudkin, M.B. Birm.; T. J. Ryan, St. Bart.'s; H. B. C. Sandiford, St. Thomas's; A. J. Sanghani, M.B. Bomb., West London; B. H. Sayed, M.B. Punjab and St. George's; J. W. V. Sheldon, L.M.S.S.A., Guy's; I. Singh, M.B. Punjab, London; F. J. Sladen, Middlesex; S. B. Smith, Guy's; E. J. Somerset, King's Coll.; Charlotte M. H. Sparrow, Royal Free; J. E. Stephens, St. Thomas's; F. Summers, King's Coll.; Annie C. Taylor, Camb. and Univ. Coll.; N. S. Taylor, King's Coll.; Enid A. Taylour, Bristol; D. H. H. Thomas, Cardiff and Westminster; H. R. Thompson, Camb. and London; A. S. Thorley, Univ. Coll.; Greta Traub, King's Coll.; H. A. Treble, Oxford and Guy's; E. Troensegaard-Hansen, Copenhagen and Charing Cross; A. R. Walters, Middlesex; E. A. Webb, M.R.C.V.S., Guy's; C. U. Wickham, Birmingham; R. F. Winckworth, St. Thomas's; and Albertine L. Winner, Univ. Coll.

The under-mentioned diplomas were conferred, jointly with the Royal College of Surgeons, upon the following candidates:—

D.P.H.—E. R. Bennion, A. D. Cust, I. Davies, J. F. Galloway, C. Ive, J. D. Kershaw, S. Kin, M. R. Lakhwarah, Kathleen M.

McKeown, J. Maddison, N. F. Pearson, K. N. Sen, G. M. Thomas, and C. H. Williams.

D.T.M. & H.—S. S. Alam, A. S. Arora, E. F. Duck, P. B. Fernando, W. A. Gomes, Florence R. Hart, Esther C. Johnson, W. A. N. Marrow, N. M. Mian, F. J. O'Meara, C. W. Richardson, Mary M. Richardson, A. J. Sanghani, W. J. Silva, J. Singh, and E. P. Veatch.

D.O.M.S.—W. F. T. Adams, R. H. B. Barrow, A. S. Baxi, M. L. Bhagat, S. C. Biswas, R. Bolton, M. M. D. Chughtai, R. A. Condon, Margaret C. Falconar, S. H. Faulkner, P. Fleming, R. E. Henry, R. Lal, A. u. D. Minhas, I. A. Mohamed, N. K. Munsi, W. J. Robertson, C. B. V. Tait, and R. Walkingshaw.

D.P.M.—H. L. Burton, C. C. Davis, S. W. Hardwick, W. V. Harke, W. Hinds, Effie L. Hutton, J. H. O. Roberts, Marjorie E. F. Sanders, R. H. Stanbridge, E. S. Stern, C. A. Sundara Raj, and L. S. Torrance.

D.L.O.—C. N. L. Cantor, M. A. Carneiro, S. K. Chatterji, W. A. D. Drummond, J. C. McFarland, J. Parry-Evans, E. E. Scharfe, M. D. McGill, and R. R. S. Strang.

Royal College of Surgeons of England

An ordinary meeting of the Council was held on July 28th with Sir Holburt Waring, the president, in the chair. Sir Arthur Keith was appointed Master of the Buckston Browne Research Farm. Mr. W. Sampson Handley was re-elected a member of the executive committee of the Imperial Cancer Research Fund.

Diplomas of Membership were granted to 155 candidates whose names appear elsewhere as new licentiates of the Royal College of Physicians (with the exception of H. Barcroft, F. H. Bentley, A. Rashid, and E. Rudkin). Diplomas in ophthalmic medicine and surgery were also granted jointly with the College of Physicians.

University of London

At recent examinations the following candidates were successful:—

M.D.

Branch I. (*Medicine*).—H. G. Close and M. M. Cowasjee, Guy's Hosp.; Marjorie M. Dobson, Roy. Free Hosp.; C. N. Evans and Isaac Gordon, St. Bart.'s Hosp.; Michael Kremer, Middlesex Hosp.; Florence Louis, Roy. Free Hosp.; Ian McPherson, Middlesex Hosp.; Anna P. Montgomery, Charing Cross Hosp.; R. K. Price, St. Bart.'s Hosp.; T. N. Rudd, London Hosp.; and J. G. Scadding, Middlesex Hosp.

Branch II. (*Pathology*).—Ruby O. Stern, Charing Cross Hosp.

Branch III. (*Psychological Medicine*).—Murdo Mackenzie, Guy's Hosp.; Muriel L. M. Northcote, Roy. Free Hosp.; D. N. Parfitt, Univ. Coll. Cardiff; and Mary E. Tyars, and Hilda M. Weber, Univ. Coll. Hosp.

Branch IV. (*Midwifery and Diseases of Women*).—F. S. Cooksey, King's Coll. Hosp.; Greta Hartley, Roy. Free Hosp.; Frank Heber, London Hosp.; Marion Ravell, Roy. Free Hosp.; F. R. Stansfield, Univ. of Leeds; and Dorothea C. Wigfield, Roy. Free Hosp.

Branch V. (*State Medicine*).—E. J. de Verteuil, St. Bart.'s Hosp.; R. D. Gross, Guy's Hosp. and London Sch. of Hygiene and Trop. Med.; and W. H. S. Wallace, St. Thomas's Hosp. and London Sch. of Hygiene and Trop. Med.

Branch VI. (*Tropical Medicine*).—R. C. Amies, St. Thomas's Hosp. and London Sch. of Hygiene and Trop. Med.

B.D.S.

A. E. Fisher and G. B. Hunter, Guy's Hosp.

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—N. P. Bruce, Univ. of Oxford and Charing Cross Hosp.; E. F. David, Univ. of Cologne and Royal Free Hosp.; I. S. Lloyd, Royal Colleges, Edinburgh; T. S. Nicol, Charing Cross Hosp.; and L. R. C. Rose, Univ. of Manchester.

Medicine.—R. N. O'D. Burns, Univ. of Bristol; M. Davies, Charing Cross Hosp.; C. H. Fagge, Univ. of Oxford and Guy's Hosp.; A. E. Glanvill, Univ. of Birmingham; G. F. C. Harvey, Univ. of Manchester; D. Kyle, Univ. of Cambridge and St. Mary's Hosp.; H. Owen, Univ. of Oxford and St. Mary's Hosp.; and R. H. Wheeler, Univ. of Sheffield.

Forensic Medicine.—F. W. Baskervill, St. Mary's Hosp.; N. P. Bruce, Univ. of Oxford and Charing Cross Hosp.; R. N. O'D. Burns, Univ. of Bristol; E. Cook, Univ. of Liverpool; C. H. Fagge, Univ. of Oxford and Guy's Hosp.; A. E. Hassan, Univ. of Birmingham; and R. H. Wheeler, Univ. of Sheffield.

Midwifery.—R. N. O'D. Burns, Univ. of Bristol; M. B. Chandulal, Univ. of Hong Kong; T. S. Nicol, Charing Cross Hosp.; B. Shapiro, Univ. of Witwatersrand and St. Mary's Hosp.; and L. Wailer, Guy's Hosp.

The following candidates, having completed the final examination, are granted the diploma of the Society entitling them to practise medicine, surgery, and midwifery: M. Davies, I. S. Lloyd, T. S. Nicol, and L. R. C. Rose.

Portrait of Sir Arbuthnot Lane

At a recent meeting in the court room of Guy's Hospital a three-quarter length portrait of Sir Arbuthnot Lane, painted by Capt. E. Newling, was presented to the governors of the hospital by his house surgeons between the years 1888 and 1918, 15 of whom were present. Mr. C. H. Fagge, who made the presentation on behalf of the subscribers, said that they desired the presentation to be an index of their appreciation of Lane's work as a surgeon—of himself, as a man of great originality of ideas, of unusual mechanical sense, and of remarkable technical dexterity.

British College of Obstetricians and Gynæcologists

The quarterly meeting of the Council was held in London on July 25th with Prof. W. Blair Bell, the president, in the chair. The president reported the deaths of two Foundation Fellows—Prof. H. Leith Murray (Liverpool) and Dr. W. D. Macfarlane (Glasgow)—and of one Foundation Member, Dr. A. Remington Hobbs (London).

Prof. J. Windeyer (Sydney) was admitted to the Foundation Fellowship in absentia, and Dr. Ivan Young Patrick (Montreal) was admitted to the Foundation Membership in absentia. The president announced that the following candidates had passed the examination for membership of the College: G. H. Alabaster, W. J. H. M. Beattie, C. B. Baxter, Gladys H. Dodds, E. A. Gerrard, Alistair Gunn, T. A. N. Jeffcoate, H. R. MacLennan, D. H. McLeod, Chassar Moir, Robert Newton, C. R. Stansfield, and Norman L. White.

The president reported that a deputation of the Council had discussed with the standing committee of the Royal College of Physicians and the Royal College of Surgeons the question of a diploma in obstetrics and gynæcology. The president informed the Council that it was hoped to open the College House, 58, Queen Anne-street, at the end of October or the first week in November, but full details of the ceremony had not yet been arranged. The Council decided that the Honorary Fellowship of the College should be conferred upon Sir Robert Jones, and Dr. W. P. Graves, professor of obstetrics and gynæcology in Harvard University.

Dr. J. S. Fairbairn was elected to be the next president of the College and to take office at the autumn meeting of the Council. Mr. Eardley Holland was re-elected hon. treasurer and Prof. Fletcher Shaw hon. secretary. Mr. A. Leyland Robinson (Liverpool) was elected to fill the vacancy on the Council created by the death of Prof. H. Leith Murray.

Guy's Hospital Apothecaries

The superintendent of Guy's Hospital has received a cheque for £100 from a correspondent whose grandfather, Richard Stocker, was appointed apothecary of the hospital on July 8th, 1795, and lived in the hospital, acting as apothecary and medical officer, until Oct. 16th, 1834. In that year he died, and was succeeded in the post by a son who retired only a short time before his death in December, 1878. Thus two members of the Stocker family served the hospital over a period of 83 years. The elder Stocker, Richard, is buried in the crypt of the hospital chapel, and lies near Thomas Guy.

Maternity Block at Workington

A maternity block with a general ward for six and two private wards has been presented to Workington Infirmary by Miss Helena A. M. Thompson, who recently formally opened it.

Nurses Lawn Tennis Challenge Cup

The final match between representatives of the nursing staffs of eighty hospitals, in competition for the lawn tennis challenge cup presented by the *Nursing Times*, was played at St. Charles's Hospital on July 28th. The number of entries constituted a record. The final result of the tournament was that the representatives of St. Thomas's Hospital retained the cup, beating the representatives of the Middlesex Hospital by 27 games to 19. The St. Thomas's players were Charge-Nurse M. E. Flambert and Staff-Nurse M. Gummerford ("A" Team), and Nurse L. M. Kay and Nurse M. V. Trubshaw ("B" Team). The challenge cup was entrusted to Miss Flambert by the Editor of THE LANCET, and souvenir cups were presented to each of the winners. The runners-up, who at one period of the match made a good fight, received books. A large company watched the games and remained for tea with the matron of St. Charles's Hospital.

Hospital Coöperation at Manchester

A scheme for joint working between the Manchester and Salford Hospital Society and Convalescent Homes Fund and the Manchester and district hospitals, with the object of increasing the income of the hospitals by organised collections, in factories, warehouses, and the like, has been provisionally approved. It is proposed that there should be experimental working for a period of three years. The fund, which has about 160,000 subscribers and last year raised £55,000, maintains three convalescent homes for 190 patients. It is proposed that after defraying the 6 per cent., which is the cost of organisation, the money should be allocated as follows: the first £10,000 to the convalescent homes; the second £10,000 to the hospitals; 15 per cent. of the next £30,000 to the convalescent homes and 85 per cent. to the hospitals; the next £20,000, 10 per cent. and 90 per cent. respectively. Any sum in excess of £70,000 is to be dealt with at the discretion of a joint committee representative equally of the Saturday Fund and the hospitals.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

PADDINGTON MEDICAL SOCIETY.
TUESDAY, August 9th.—9 P.M. (At the Great Western Royal Hotel, Paddington). Mr. P. Jenner Verrall: Backache.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, August 8th, to SATURDAY, August 13th.—ALL SAINTS HOSPITAL, Austral-street, West-square, S.E.11. Post graduate course in Urology. Afternoons, clinical and cystoscopic demonstrations. (Open only to Members of the Fellowship.)

Appointments

STRACHAN, G. I., M.D. Glasg., F.R.C.P. Lond., F.R.C.S. Eng. has been appointed Professor of Obstetrics and Gynæcology in the Welsh National School of Medicine.

WATKINS, A. G., M.D., B.S. Lond., honorary physician to the Department of Children's Diseases (Medical).

Certifying Surgeons under the Factory and Workshop Acts: CAPELL, L. F., M.B., Ch.B. Edin. (Mildenhall, Suffolk); CROMARTY, J. W., M.B., Ch.B. Edin. (Stromness, Orkney); and LANG, J. F., M.B., Ch.B. Glasg. (Bathgate, West Lothian).

London County Council.—Assistant Medical Officers, Grade II.: PURSER, J. A., M.B., St. Nicholas Hospital; ROBB, D. C., M.B., Hackney Hospital; MCKENZIE, D. K., M.B., Queen Mary's Hospital, Sidcup; O'SULLIVAN, J. A., M.B., Mile End Hospital; JACK, W. L., M.B., St. Mary Abbot's Hospital; PECKHAM, R. B., M.R.C.S., City of London Institution; TAYLOR, DOROTHY, M.B., Fulham Hospital; SCOTT, T. S., M.B., St. George-in-the-East Hospital; and DE LAROY, J., M.B., Constance-road, Institution. Assistant Medical Officers, Grade I.: SMITH, D. R. E., M.R.C.S., St. Luke's Hospital, Lowestoft; and MAHER, R. M., M.R.C.P., St. Alfege's Hospital. Senior Assistant Medical Officers, Grade II.: BEVAN-JONES, J., M.R.C.P., Hackney Hospital; and LANKESTER, A. H., M.R.C.S., Queen Mary's Hospital for Children, Carshalton. Senior Assistant Medical Officer, Grade I.: KELLEHER, W. H., M.D., South-Eastern Hospital.

Vacancies

For further information refer to the advertisement columns

Birkenhead General Hospital.—Res. Sen. H.S. At rate of £150. Also Sen. H.P. and Cas. O. Each at rate of £100.
Boolle General Hospital.—Two H.S.'s, H.P., and Cas. O. Each at rate of £150.
Bradford, Municipal General Hospital, St. Luke's.—H.P.'s and H.S.'s. All at rate of £200.
Brighton, New Sussex Hospital for Women and Children, Windlesham-road.—H.P. and H.S. Each £100. Also Clin. Asst. for Out-patients.
Brisbane, Australia, Brisbane Clinic.—Surgeon for Ear, Nose, and Throat. £500.
Bristol Royal Infirmary.—H.P.'s and H.S.'s. Each at rate of £60. Also Cas. H.S. At rate of £100.
Burnley, Victoria Hospital.—H.S. At rate of £150.
Bury Infirmary, Lancs.—Third H.S. At rate of £150.
Cancer Hospital, Fulham-road, S.W.—Asst. Radiologist. £350.
City of London Hospital for Diseases of the Heart, &c., Victoria Park, E.—H.P. At rate of £100.
Coventry, City of.—Deputy M.O.H. £750.
Coventry and Warwickshire Hospital.—Res. Cas. O. £125.
Doncaster Royal Infirmary.—Cas. H.S. and H.P. Each at rate of £200.
Dorchester, Dorset County Hospital.—H.S. At rate of £160.
Gloucester, Gloucestershire Royal Infirmary, &c.—Hon. Asst. Ophth. Surgeon.
Halifax, St. Luke's Hospital.—Jun. Res. M.O. £250.
Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—Cas. M.O. for Out-patient Dept. At rate of £100.
Harrogate and District General Hospital.—Second Res. M.O. £150.
Hertford County Hospital.—H.P. At rate of £150.
Hull Royal Infirmary.—Third H.S. and Asst. H.P. for Parent Institution. Each at rate of £150. Also H.S. for Sutton Branch Hospital. At rate of £160.
Ilford, King George Hospital.—H.S. At rate of £100.
Inverness, Royal Northern Infirmary.—H.P. At rate of £100.
Kendal, Westmorland County Hospital.—H.S. At rate of £200.
Leicester, Leicestershire and Rutland Mental Hospital, Narborough. Asst. M.O. £350.
Leicester Royal Infirmary.—H.P. At rate of £125.
Liverpool Royal Children's Hospital.—Res. M.O. and Res. Surg. O., at Heswall Branch Institution. Each at rate of £120.
London Hospital, E.—Surgical First Asst. and Registrar. £300.
Manchester, Ancoats Hospital.—Two H.S.'s. At rate of £100 respectively.
Margate and District General Hospital.—Res. M.O. £150.
Newcastle-on-Tyne, Wooley Sanatorium, nr. Hexham.—Jun. Asst. M.O. £250. Also Locum Tenens to Med. Supt. 7 guineas weekly.
Oldham County Borough Education Committee.—Asst. Schools M.O. £500.
Oxford, The Warneford.—Second Asst. M.O. £300.
Preston and County of Lancaster Royal Infirmary.—Cas. O. £150.
Putney Hospital, The Lower Common, S.W.—Res. M.O. At rate of £150.
Richmond Royal Hospital, Surrey.—Hon. Surgeon to Ear, Nose, and Throat Dept.
Rotherham Hospital.—Sen. H.S. £200.
Royal Northern Hospital, Holloway, N.—Obstetric H.S. At rate of £70.
St. Bartholomew's Hospital.—Physician.
St. George-in-the-East Hospital, Raine-street, E.—Res. Med. Supt. £950.
St. Thomas's Hospital, S.E.—Sen. Res. Anæsthetist. At rate of £200.
Salisbury General Infirmary.—H.S. and H.P. Each at rate of £150.
Sheffield, Jessop Hospital for Women.—Two H.S.'s. Each at rate of £100.
Southampton, Royal South Hants and Southampton Hospital.—Res. Surg. O. At rate of £200.
South Shields, Harton Hospital.—H.S. £150.
Stockport Infirmary.—Jun. H.S. £150.
Stoke-on-Trent Orthopædic Hospital.—H.S. £150.
Swansea General and Eye Hospital.—H.P. At rate of £150.
Taunton and Somerset Hospital.—Sen. H.M.O. and H.S. £150 and £100 respectively.
Windsor, King Edward VII Hospital.—H.S. At rate of £100.

Births, Marriages, and Deaths

BIRTHS

BROCKLEHURST.—On July 25th, in London, the wife of G. L. Brocklehurst, M.D., of Margate, of a daughter.
SMITH.—On July 30th, at 86, Porchester-terrace, W., Annis Smith (née Gillie), M.R.C.P., wife of Peter Smith, of a daughter.
WOOD.—On July 22nd, at Shanklin, I.O.W., the wife of H. S. Howie Wood, M.B., of a daughter.

MARRIAGES

ADAM—WELFORD.—On July 26th, at Manchester Cathedral, John Adam, M.B., Ch.B., Laurencekirk, to Lulu Winifred Welford, London.
HUTCHINSON—HALLETT.—On July 29th, Major Charles Hutchinson, F.R.C.S.E., R.A.M.C., to Brenda Hallett, F.R.C.S.E., only child of Mr. and Mrs. Courtney Hallett, of Croydon.
INKSTER—DONALDSON.—On July 25th, at St. John's Church, Caterham, Leonard Inkster, M.A. Oxf., M.R.C.S., L.R.C.P., to Jean Ferguson, eldest daughter of the late Rev. J. Donaldson and Mrs. Donaldson, Mile End-avenue, Aberdeen.

DEATHS

ALLAN.—On Thursday, July 28th, 1932, Francis John Allan, M.D., D.P.H., R.S. Edin., at "Lincluden," Cromwell-road, Teddington, Middlesex, in his 74th year. Cremated at Golders Green Crematorium on July 30th.
BELL.—On July 24th, at Langarth, Brisco, Carlisle, Walter L. Bell, M.D. Edin., F.S.A. Scot., F.R.S.E., late of Lowestoft.
BURTCHAELL.—On July 28th, suddenly, following an operation, at the Queen Alexandra's Military Hospital, Millbank, Lieut.-General Sir Charles H. Burtchaell, K.C.B., C.M.G., LL.D., F.R.C.S.I., in his 66th year.
HAY.—On July 30th, at Rubislaw-terrace, Aberdeen, Matthew Hay, M.D., LL.D., Emeritus Professor of Forensic Medicine in the University of Aberdeen, and late Medical Officer of Health for the City.
LOW.—On July 26th, at his residence in Stoke Park Golf Club, Stoke Poges, Harold Low, M.A., M.B., B.Chir. Camb., Hon. Anæsthetist to His Majesty's Household.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

INDEX TO "THE LANCET," VOL. I., 1932

THE Index and Title-page to Vol. I., 1932, which was completed with the issue of June 25th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, London, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

FIRE AT A CHILDREN'S HOSPITAL.—When recently a fire broke out in the roof of the Birkenhead and Wirral Children's Hospital all patients were removed from danger in three minutes by the efforts of the medical and nursing staff who are regularly trained in fire-drill.

NOTES, COMMENTS, AND ABSTRACTS

THE VOLUNTARY HOSPITALS

AT a time when nearly every interest is depressed and nearly every pocket depleted, there was no unreason in the fear that the voluntary hospitals, to which no one is compelled to contribute, would have suffered severely. But the annual statistical review for 1931 of King Edward's Hospital Fund for London shows that the very reverse has happened. The total income of the 142 London hospitals covered by the review was £3,811,000, the highest figure on record, and an increase of £34,000 upon 1930, and this notwithstanding that £38,000 was added to the current expenditure. These higher outgoings are the inevitable consequence of progress, including the significant and encouraging addition of 330 beds. The aggregate surplus of income over expenditure was £76,000, only £4000 less than in 1930. Towards individual solvency there was a substantial advance, the number of hospitals with a surplus having risen from 72 to 85. Thus out of 142 hospitals there were only 57 that failed to balance their ordinary expenditure account, a remarkable achievement in the circumstances. That there should have been some falling off in subscriptions and donations was only to be expected, but a happy fate stepped in to make this loss more than good by implanting "holy and wholesome thoughts" into the minds of testators. Large as these benevolences are, however, they are so uncertain a quantity that hospital budgets need to be prepared on a very conservative basis in this respect. Yet, taken all round, the King's Fund review seems to be justified in its belief that "the prevailing depression need have no untoward effect upon the London voluntary hospitals as a whole during 1932."

There is a substantial reason for basing similar hopes upon the current fortunes of the provincial hospitals generally. In rebuilding and extensions they are showing remarkable activity, and within the last week or two they have received some splendid benefactions. Thus Lord Iveagh has given £50,000 to Southend, Sir John Priestman a similar sum to Sunderland, and Mr. A. W. Macnamara £25,000 to Birmingham. Contributory schemes are increasing in number and importance, and patients generally are learning that, in so far as they are able, it is their duty to make a practical return for what is done for them. Meanwhile, the "pay-bed" is making its contribution at once to a growing necessity and to the solvency of the voluntary hospitals.

ILLNESS AND THE BAROMETER

ATMOSPHERIC influences on morbid processes in the human body verge so closely on the unfashionable teachings of miasms that not a little moral courage is required in reopening this question. In doing so, Dr. Herman von Willebrand [1] is more likely to command an attentive audience than most advocates of "lost causes" because for the last quarter of a century he has been attached to the Helsingfors fever hospital, of which he is now director. He claims to have treated about 12,000 cases of scarlatina at this hospital since 1906. He has been struck by the fact that scarlatinal admissions occur by fits and starts; several consecutive days may pass without any or only a few single admissions, and then there are half a score or more on the same day. This jerky incidence is only partially explicable by the occasional discovery of the source of infection in the milk-supply. Willebrand is by no means prepared to discard this recently recognised factor in the genesis of scarlatina, and he refers to an epidemic early in May, 1929, when some 500 persons developed scarlatina, and 90 per cent. of the first crop of cases could be traced to hæmolytic streptococci of the scarlatinal type found in one and the same lot of milk. But there are occasions when some other factors seem to play an important part; and his explanation of the interplay of these factors is as follows: During an epidemic of scarlatina, only a few of the persons exposed to infection catch the disease or stop short at a sore-throat. A certain proportion of the exposed persons, who would have remained immune under favourable atmospheric conditions, fall ill if exposure to infection coincides with unfavourable atmospheric conditions; and it is probable that several other diseases behave like scarlatina in this respect. This is not the place for the reproduction of the tables and graphs published by Willebrand in support of his thesis; but the following samples may be given: In July, 1927, there was not a single case of scarlatina in Helsingfors, and practically throughout this month the atmospheric pressure was high. On the other hand, in July, 1928, when more than 30 cases of scarlatina occurred, the atmospheric pressure was frequently low. He deals in isolated cases as well as in statistics. He was once called to an elderly professor of physics whom he knew well, and who usually enjoyed good health. On this occasion he looked very ill and complained of many vague symptoms. No objective sign of disease being demonstrable, no diagnosis was obvious. The patient remarked that he was in the habit of looking at the barometer twice a day, that he always felt ill when the atmospheric pressure was low, and that he had not been able to consult the barometer since yesterday. Glancing at the barometer himself, Willebrand found one of the lowest readings ever recorded in Helsingfors—i.e., about 715 mm. He is inclined to trace the fourscore deaths in 1930 during a fog in Belgium in part, at any rate, to a low atmospheric pressure, and he believes that a weather-sensitive person can forecast changes in the weather long before they are demonstrable by any instrument. "The human organism, particularly when modified by disease, seems to be the most sensitive instrument we know of up to the present." He concludes with the rather alarming prophecy that some day the customary weather forecast will include a special noso-aeric bulletin. He does not, however, say how persons specially sensitive to noso-aeric influences will take cover on receipt of such a bulletin.

[1] Finska Läkaresällskapets Handlingar, April, 1932.

A VIGOROUS ROMANCE [1]

A REPRINT of Sir Ronald Ross's early romance has been issued, revised by the author. The first draft of the book was written in 1887, mostly among the scenes which are described in it, as Ross at the time was stationed in the Andamans. He has said that his story owed its origin to the chance reading of that powerful novel by Charles Reade and Dion Boucicault, "Foul Play," but except the fact that the convict hero of "Foul Play" was a castaway, there is little similarity to be detected. "The Child of Ocean," when first published, was acclaimed for its imaginative power by many, among others by Rider Haggard, to whom, it is easy to see, both the details and the language employed would appeal. There is no doubt that the young author was intensely ambitious in his design, and the measure in which he succeeded was very creditable. We commend the book to those who recall how they responded to the imaginative qualities in books by Reade, Haggard, and that far greater romancer, Victor Hugo.

[1] The Child of Ocean. A Romance by Sir Ronald Ross. London: George Allen and Unwin, Ltd. 1932. Pp. 387. 7s. 6d.

MEMORIAL TO HUGHLINGS JACKSON.—The London County Council have fixed a glazed-ware tablet on No. 3, Manchester-square, W., to commemorate the fact that John Hughlings Jackson lived in that house.